

# **Exhibit 4**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION

ABC Corporation I et al ,  
Plaintiff,

v.

The Partnerships and Unincorporated  
Associations Identified on Schedule A ,  
Defendants.

---

Case No. 1:20-cv-04806

EXPERT DECLARATION OF LANCE RAKE  
HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

## **TABLE OF CONTENTS**

	<b><u>Page</u></b>
INTRODUCTION .....	1
BACKGROUND AND QUALIFICATIONS .....	2
DESIGN PRINCIPLES APPLIED .....	6
THE HANGZHOU CHIC DESIGN PATENTS .....	7
THE D739,906 DESIGN PATENT .....	10
LEGAL PRINCIPLES-.....	10
ORDINARY OBSERVER.....	10
SUMMARY OF OPINIONS .....	11
MARKMAN CLAIM CONSTRUCTION .....	12
NON-INFRINGEMENT ANALYSIS OF THE PATENTS-IN-SUIT .....	13
DEFICIENCIES IN THE PAUL HATCH DECLARATION.....	15
NON-INFRINGEMENT ANALYSIS PRODUCT A .....	19
NON-INFRINGEMENT ANALYSIS PRODUCT B .....	23
NON-INFRINGEMENT ANALYSIS PRODUCT C .....	48
NON-INFRINGEMENT ANALYSIS PRODUCT D .....	62
CONCLUSION .....	77
 EXHIBIT 1 .....	 87
EXHIBIT 2.....	109
EXHIBIT 3.....	113
EXHIBIT 4.....	123
EXHIBIT 5.....	133

EXHIBIT 6.....	142
EXHIBIT 7.....	150
EXHIBIT 8.....	160
EXHIBIT 9.....	165
EXHIBIT 10.....	175



## **INTRODUCTION**

1. I, Lance Rake, have been retained by counsel as an expert witness to provide my opinion on the alleged infringement of Plaintiffs Hangzhou Chic Intelligent Technology Co. and Unicorn Global Inc.'s (collectively "Hangzhou") U.S. Patents D737,723, D738,256, D784,195, and D785,112 ("the Patents-In-Suit") by multiple products (Product A, Product B, Product C and Product D identified in this declaration, collectively "Products") sold by various defendants (Gyroor, Jiangyou-US, Gyroshoes, Fengchi-US, HGSM, Urbanmax, Gaodeshang-US, Gyroor-US, collectively "Defendants").

2. I have set forth my academic and professional qualifications and relevant experience in the Background and Qualifications section of this report, and have attached a copy of my curriculum vitae as Exhibit 1, which contains further details on my education, experience, publications, and other qualifications for rendering an expert opinion here.

3. In forming the opinions, I express in this report, I considered materials provided by counsel, and the references discussed in this report. Further, I relied on my own knowledge, training, and over 45 years of experience in designing, developing, teaching, and consulting in the industrial design industry. I reserve the right to update and revise my opinions and conclusions, for example, should any additional data or information become available to me.

4. I am compensated at my standard hourly rate of \$300 per hour for the time I spend on this matter. My compensation is not related in any way to the outcome of this proceeding, and I have no other interest in this proceeding.

## **BACKGROUND AND QUALIFICATIONS**

5. I am an industrial designer and a design researcher and educator. I have a Bachelor's Degree in Industrial Design from the University of Kansas, received in 1974, and a Master's Degree in Product Design from North Carolina State University, received in 1982. According to a 2004 brochure from the Industrial Designer's Society of America (IDSA):

*Industrial design is the profession that determines the form of a manufactured product, shaping it to fit the people who use it and the industrial processes that produce it.... Preparation for practicing Industrial Design requires a baccalaureate degree in that field. Industrial design links knowledge about technology and the visual arts with knowledge about people. In addition to a thorough understanding of the physical sciences, engineering principles, ergonomics, aesthetics, and industrial materials and processes, Industrial Designers should be well-grounded in the social sciences, such as psychology, sociology and anthropology, and the communication arts, such as photography, video, print and electronic media.*

6. I have worked as an industrial designer continuously for 46 years since receiving my undergraduate degree in 1974. In 1980, I began my career as a full-time faculty member at various universities. From 1980 to 1984, I was an Assistant Professor of Industrial Design at Auburn University. From 1985 to 1986, I was the Product Design Course Supervisor (Department Chair) at UNITEC Institute of Technology in Auckland, New Zealand.

7. I then returned to the United States and began teaching at the University of Kansas in 1987 as an associate professor. I am presently a full professor with the University of Kansas, and my formal title is Professor of Design, School of Architecture & Design. Also while at the University of Kansas, I was the Founding and Acting Director of the Center for Design Research from 1991-2005. My responsibilities at the University of Kansas require me to direct 40% of my time to creative activity and research.

8. For 16 years, from 2000-2016, I served as a design consultant to Infusion Design. My creative activity there centered on collaborative design work in the transportation and consumer products industries. As a practicing professional, I have designed commercial and consumer products, transportation interiors, packaging, and exhibits for over 80 different clients. I have been retained to create designs for manufactured products that contain metal components, including commercial electronics, consumer products, lawnmowers, and airplane and boat interiors.

9. As a design practitioner and educator, I have conducted and/or directed research into the study of markets from a product design perspective, as well as researching product usability. I have given presentations on design at several institutions around the world. Topics include ergonomics, design education, design practice, and contemporary issues in the practice of industrial design.

10. I have 16 invited international presentations and lectures on various design topics. My work has been supported by over 25 internal and external grants. In the last five years over 30 design websites and blogs have profiled my work, and three recent books feature my design work. Professionally, I have worked on hundreds of designs for over 90 unique clients in the past 44 years. A list of my design-related research, publications, speaking engagements, and professional clients can be found in my attached curriculum vitae.

11. My work has been featured in numerous articles and texts, including the text “Think Wrong,” relating to design innovation and processes. The book features a story about my design process, focusing on my philosophy of working with and manipulating physical materials early in the design process to develop prototypes early in the design process.

12. I was the Founder & Acting Director of KU’s Center for Design Research, from 1994-2006. The CDR was created to focus our graduate program in order to

realign research efforts in collaboration with regional and national industry partners. I was solely responsible for the effort, establishing an effective design team, securing funding and research projects from industry partners including Learjet, Bass Pro Shops, and Hewlett-Packard.

13. Since 2010 I have designed a number of skateboards, longboards, stand-up paddleboards and bicycles as part of my research at the University of Kansas.

14. In my role as a professor, I have taught an Industrial Design Studio course nearly every semester since approximately 1980, which is a product-focused course. As part of the Industrial Design Studio, I have supervised groups of students developing a variety of different products.

15. I have served as an expert witness since approximately the year 2000, and have been retained as an expert witness in approximately thirty cases, including cases involving design patents and/or trade dress claims. I received an IDSA Continuing Education Certificate entitled "How to Serve as an Expert Witness in Design Patent Litigation" in 2008. Many of the cases for which I have been retained have involved issues relating to alleged design patent infringement.

16. I am an inventor on 12 design and utility patent applications, including U.S. Patent No 7,900,781 for "Storage System," U.S. Patent No. 5,490,676 for "Playing Cards with Gripping Surface," U.S. Patent No. D600,928 for "Step Stool," and U.S. Patent No. 6,820,286 for "Protective Mask."

17. In Fall 2012, I was awarded a sabbatical to teach and conduct design research at the Industrial Design Centre at the Indian Institute of Technology-Bombay in Mumbai, India. I have been a facilitator and advisor to the Swedish Industrial Design Foundation's Sommar-designkontoret. In 2009, I was one of only two American designers invited to participate in ICSID (International Congress of Societies of Industrial Design) Interdesign Citymove, Gellivare, Sweden. In 2016 I was a Visiting Professor in the Mechanical Engineering Department at Högskolan i

Halmstad (Halmstad University) in Halmstad, Sweden.

18. In 2004, I was included in ID Magazine's "Design 50." The editors at ID chose to profile the work of 50 US designers in their January/February 2004 Issue - one from each state. I was honored as the designer chosen to represent Kansas. ID is the largest and most prestigious journal in the US for our profession.

19. I am a 2015-16 Fulbright Senior Scholar.

20. I am also a 2019-2020 Global Fulbright Scholar.

21. I was one of "133 Distinguished Industrial Design Professionals and Professors" to sign the Amicus Brief supporting Apple in its case against Samsung before the Supreme Court. Other signatories included Dieter Rams, Norman Foster, Robert Brunner, Alexander Wang, Paula Scher, Jasper Morrison.

22. I have offered testimony or prepared expert opinions in at least 25 matters in the past five years. A complete listing of cases in which I have offered testimony or prepared expert opinions is attached as Exhibit 2 to this report.

23. Based on these and other experiences, I believe that I am qualified to give opinions as an industrial designer skilled in the art with respect to the designs at issue here. Due to my work with other industrial designers over the course of my career, I also believe I am qualified to give an opinion about what would be understood by one skilled in the art of ceiling fans like those at issue here.

24. I also believe that I am qualified to give opinions about how an ordinary observer or consumer would perceive the devices and designs in question. As a professional working in the areas of industrial design, I have 46 years of experience in industrial design. My job was to design mass-produced products to be attractive, useful, and profitable. My ability to understand the product attributes that define a successful visual impression with consumers is based on years of user research and iterative design of hundreds of products, and continuous collaboration with professionals in user experience, marketing, engineering, production, and service. I

review design resources daily to spot and respond to trends in design, architecture, and technology.

### **DESIGN PRINCIPLES APPLIED**

25. Some of the opinions in this report are based on a working understanding of Gestalt principles as they apply to design. As a design educator for 40 years, I can confidently say that the principles of design as originally formulated and taught at the Staatliche Bauhaus and based on Gestalt psychology have served as the foundation of nearly every formal school of design education in the world. It is unlikely that any practicing industrial, graphic, or interior designer would be unfamiliar with Gestalt theory as it applies to design.

26. Gestalt refers to principles of visual perception developed by German psychologists in the 1920's and still used to provide a foundation for design studies in universities all over the world. These principles describe how we perceive the world around us. Of all the principles, Figure-Ground is the most significant, explaining how the eye differentiates an object from its surroundings. The Figure-Ground principle tells us that in perceiving a visual field, some shapes or contours take a prominent role (figure) while others recede into the background (ground).

27. You can read this page because of the contrast between the black type and the white page. We can see different letterforms because we "read" the differences in contour or outline of the different characters. We tend to perceive some elements as the figure, with a particular shape and contour, while other elements appear as the ground, separate from and behind the main focus of the figure. This is usually referred to as Figure/ Ground relationship.

28. Gestalt principles provide background on how the ordinary observer will perceive shape and form. Designers regularly rely upon these principals so they

know in advance how observers will respond to or perceive a design. Seminal texts include Joseph Albers's *Interaction of Color*, Johannes Itten's *The Elements of Color*, and Rudolf Arnheim's *Art and Visual Perception: A Psychology of the Creative Eye*. These books have been largely superseded by more contemporary texts, but the principles of Gestalt continue to provide the basis for most design foundation programs.

29. I specifically selected Gestalt Perception Theory as a scientific framework for determining whether or not the design of the Accused Products is equivalent to that of the Asserted Patents. Specifically, Gestalt principles are well-understood to be a primary scientific theory on which design education and much of modern perception science is based. Gestalt theory and related methods for measuring design equivalence is considered a primary research reference in the larger field of visual perception. Recent peer-reviewed articles support this view<sup>1</sup>.

30. I have also selected Gestalt Perception Science and related methods because Gestalt theory is widely taught at leading industrial design programs, fine art programs, and computer vision programs. In fact, I regularly instruct students on the use of Gestalt principles in many the industrial design classes that I teach at the University of Kansas. Gestalt perception science is the most widely taught general theory of shape perception as evidenced by its inclusion in many, if not all, leading academic texts. It is my understanding that much of the latest neuroscience related to visual perception verifies the basic structure and approach to Gestalt Perception Science.

## **THE HANGZHOU CHIC DESIGN PATENTS**

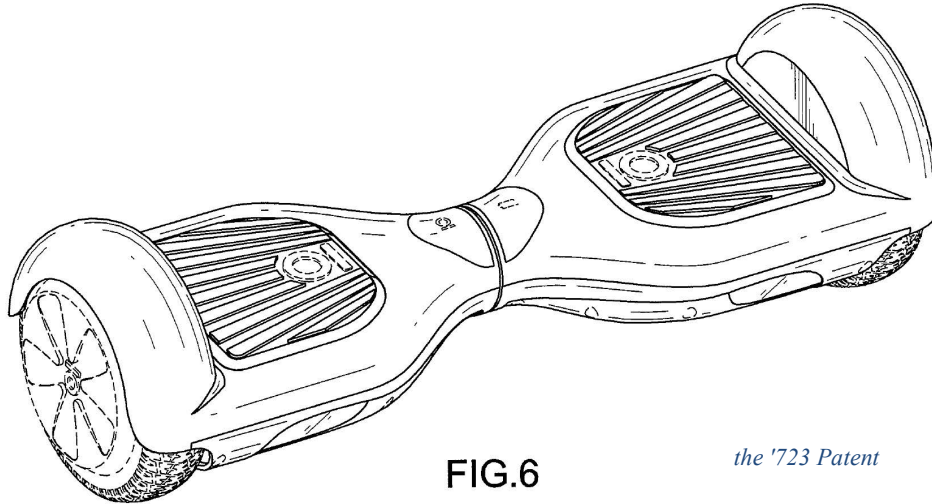
---

<sup>1</sup> Wagemans, J., Elder, J., Kubovy, M., Palmer, S., Peterson, M., Singh, M., & Heydt, R. (2012). A Center of Gestalt Psychology in Visual Perception: I. Perceptual Grouping and Figure-Ground Organization. *Psychology Bulletin*, 138(6).



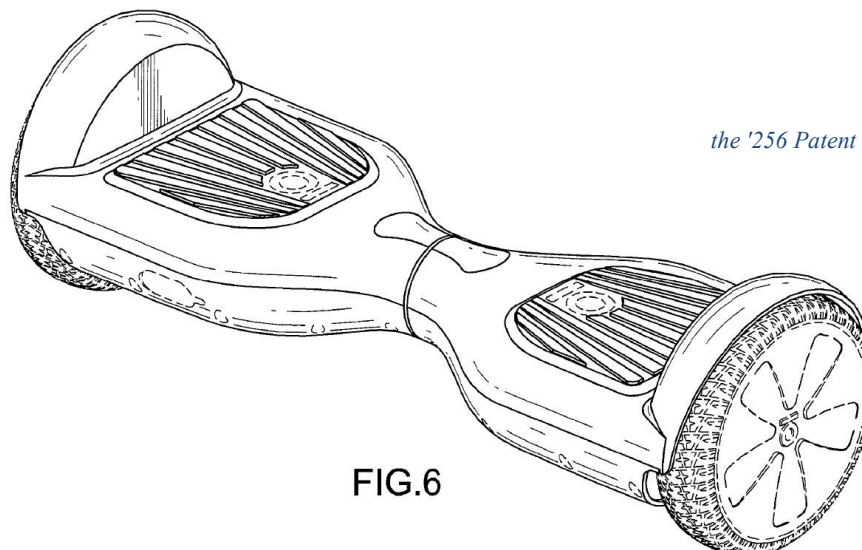
31. The four Patents-In-Suit are the U.S. Patents D737,723 (“the ‘723 Patent”), D738,256 (“the ‘256 Patent”), D784,195 (“the ‘195 Patent”), and D785,112 (“the ‘112 Patent”) for Self-Balancing Vehicles, and Human-Machine Interaction Vehicles. Self-balancing vehicles are often referred to as “hoverboards”.

32. The ‘723 Patent is titled “Self-Balancing Vehicle” and has a filing date of Dec 15, 2014. It claims priority to a foreign application CN 201430180556.4 dated



6/13/2014. A copy of the ‘723 patent is attached hereto as Exhibit 3. Broken lines set forth the bounds of the claimed design and form no part thereof.

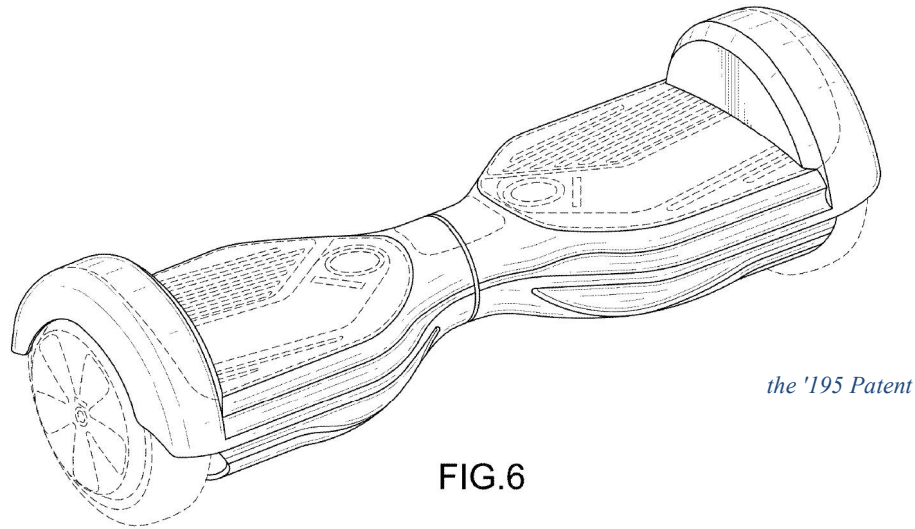
33. The ‘256 Patent is titled “Self Balancing Vehicle” and has a filing date of Dec 15, 2014. A copy of the ‘027 patent is attached hereto as Exhibit 4. Broken lines set





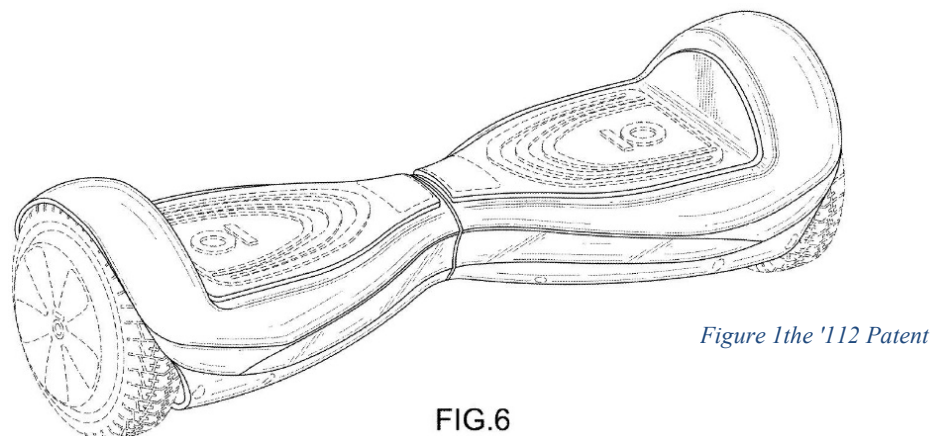
forth the bounds of the claimed design and form no part thereof. The '256 Patent is nearly identical to the '723, the main difference being the shape of the graphic detail at the center.

34. The '195 Patent is titled "Human-Machine Interaction Vehicle" and has a filing date of Feb 29, 2016. It claims priority to a foreign application 201530389352.6 dated 10/9/2015. A copy of the '195 patent is attached hereto as Exhibit 5. Broken lines set forth the bounds of the claimed design and form no part



thereof.

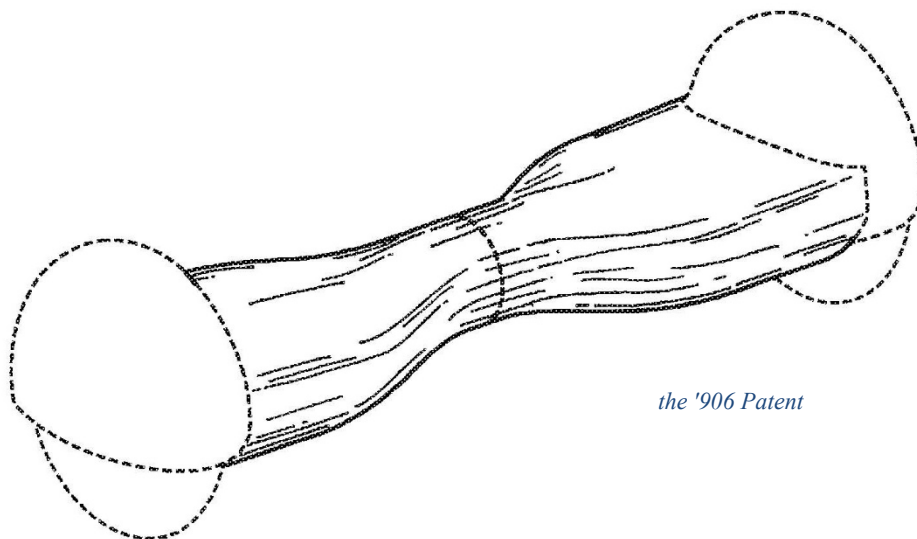
35. The '112 Patent is also titled "Human-Machine Interaction Vehicle" and has a filing date of Feb 29, 2016. It claims priority to a foreign application CN



201530481979.4 dated 11/26/2015. Broken lines set forth the bounds of the claimed design and form no part thereof. A copy of the '112 patent is attached hereto as Exhibit 6.

### **THE D739,906 DESIGN PATENT**

36. The D739,906 Patent (“the ’906 Patent”) is titled “Two-Wheeled Vehicle” and has a filing date of March 12, 2013– a copy is attached here as Exhibit 8. The filing date predates any and all of the Patents-in-Suit and must therefore be considered prior art to each of the Patents-in-Suit. Broken lines set forth the bounds of the claimed design and form no part thereof.



### **LEGAL PRINCIPLES-DESIGN PATENTS**

37. I have been informed that the test for determining infringement in design patent cases is the “ordinary observer” test.

38. The test requires a determination to be made as to whether, in the eye of an ordinary observer, giving such attention as a purchaser usually gives and familiar with the prior art, two designs are substantially the same in their overall appearance.

If the resemblance deceives the observer, inducing him or her to purchase one supposing it to be the other, the designs are substantially the same.

### **THE ORDINARY OBSERVER**

39. In this case, it is my opinion that an ordinary observer would be a customer purchasing products I am referring to as “hoverboards”. This purchaser will tend to be quite savvy and well-informed. Purchases are often made online. I have experience designing bicycles and skateboards sold online, and found that people typically “do their homework” when buying products such as skateboards and, I believe, hoverboards. Hoverboards range in price from \$100 to \$250 and up, so customers research different brands and models online, and often read reviews before making a purchase. In my opinion, the ordinary observer will be a well-informed consumer who is aware of the overall market and the similarities and differences of most of the major brands and models.

40. The most prominent features impacting the overall visual impression to the ordinary observer are the design of the two foot pads, the design of the wheels, visual details on the “neck between the footpads, and the shape of the fenders that cover the wheels, since the user most commonly sees a hoverboard from a position standing over the board.

### **SUMMARY OF OPINIONS**

41. I have evaluated the overall visual appearance of the Patents-in-Suit and the design of the Accused Product from the perspective of an ordinary observer familiar with the relevant prior art.

42. It is evident to me that the designs of Accused Products A,B,C, & D are substantially different from the design claims of the Patents-in-Suit. It is also my

opinion, based on side-by-side comparisons, that the overall visual impressions of the Patents-in-Suit are more similar than the Prior Art '906 Patent than to the Accused Products.

43. In my opinion, the visual differences between the claimed designs of the Patents-in-Suit and the design of the Accused Products would be obvious to the ordinary observer.

### **MARKMAN CLAIM CONSTRUCTION**

44. In my experience, verbal descriptions of a design are invariably too broad in some respects or too narrow in other respects to fully capture an overall claimed design. It is my understanding the law recognizes this too. I have been told that the *Egyptian Goddess* case recognizes, (a) “design patents ‘typically are claimed as shown in the drawings’”; (b) the trial court is not required to “attempt to provide a detailed verbal description of the claimed design”; (c) “a design is better represented by an illustration ‘than it could be by any description and a description would probably not be intelligible without the illustration’”; (d) but that verbal interpretation may be helpful “the claimed design as they relate to the [JM] accused design and the prior art”, “the role of broken lines”, “representations...made in the course of prosecution history”, and identifying any “purely functional” features. While words are capable of generally listing individual features, they are simply incapable of communicating the “overall look” of a design patent claim, especially where color is an element of the claim. If a list of elements or features is devised, how can we determine a visual or perceptive hierarchy? Depending on the individual observer, seeking to devise or deploy such a list, the eye may very well focus on and amplify certain aspects of the design and ignore or diminish others as the eye moves back and forth between the list and the illustration. There is a reason we use

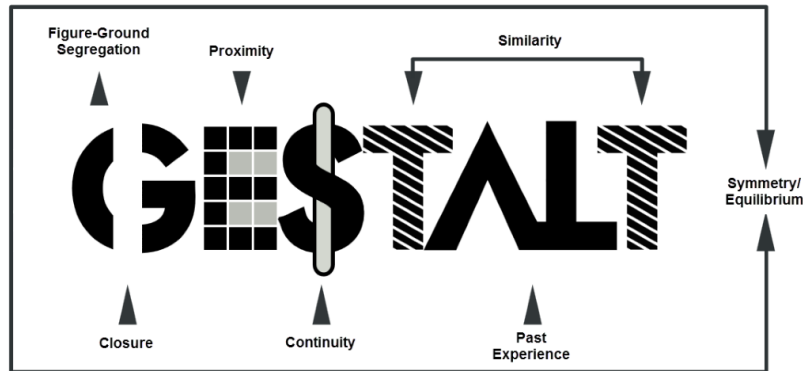
photographs on our driver licenses and passports instead of a verbal description.

### **NON-INFRINGEMENT ANALYSIS OF THE PATENTS-IN-SUIT**

45. I understand that the ordinary observer, when comparing the design of the Accused Products and the Patent-in-Suit, must do so with knowledge of the relevant prior art. Where the differences between the claimed and accused design are viewed in light of the prior art, the attention of the ordinary observer will be drawn to those aspects of the claimed design that differ from the prior art. As explained below, it is my opinion that the ordinary observer, familiar with the prior art, would find the Accused Products' overall appearance to be substantially different with respect to the design claims of the Patents-in-Suit because the overall Gestalt of the Accused Product differs in key areas from the body of prior art and the claims of the Patents-in-Suit.

46. To be sure, there are important visual features common in virtually all products in this category- most products use similar technologies and functional constraints of kinematics, ergonomics, performance and environmental considerations. For instance, most hoverboards have two wheels (one on either end) that are 6.5"-10" in diameter and spaced about 30" apart. There are two platforms to stand on, with a narrow pivot in-between, which makes it easier to turn without interference with feet or with the ground.

47. The Gestalt principles of visual perception teaches us that the eye is attracted to areas of high contrast. The figure below illustrates some of the Gestalt principles



designers regularly incorporate in their work, and I have relied on in this analysis.

48. Of all the principles, Figure-Ground is perhaps the most significant, explaining how the eye differentiates an object from its surroundings. The Figure-Ground principle tells us that in perceiving a visual field, some shapes or contours take a prominent role (figure) while others recede into the background (ground).

49. The Gestalt principle of figure-ground contrast tells us that the perimeter which separates the object from the background, is what distinguishes basic shapes to the ordinary observer. The three silhouettes below compare the perimeter contour of the '723 patent, the Accused Product A from similar vantage points.

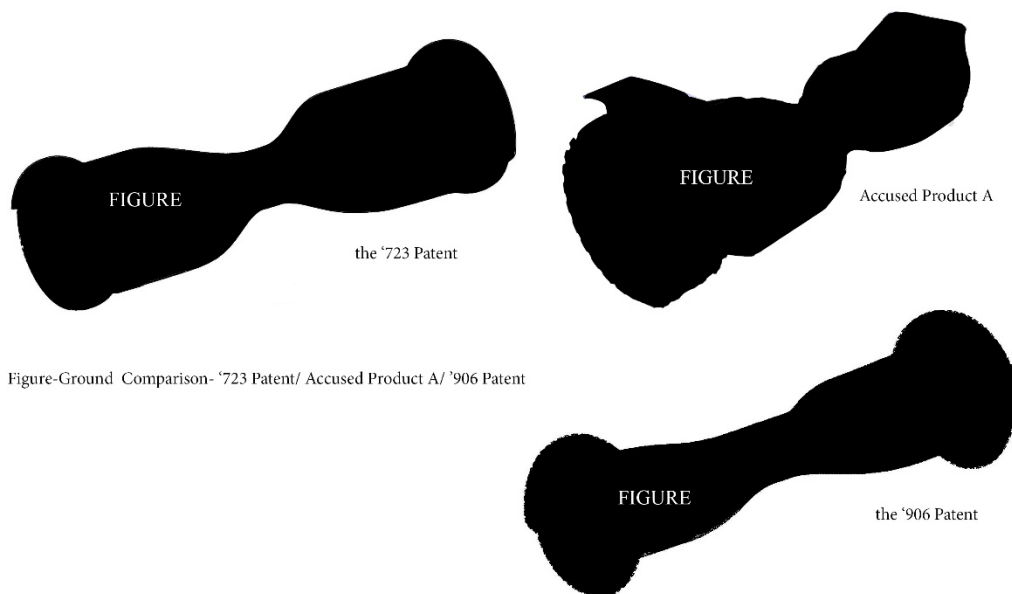
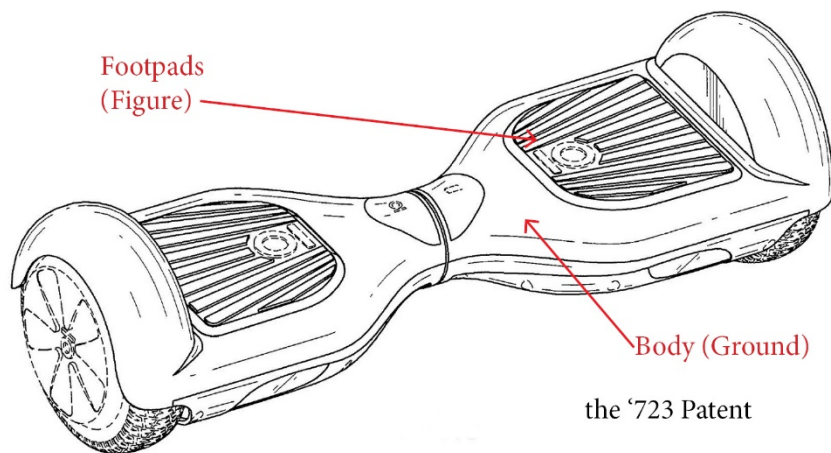


Figure-Ground Comparison- '723 Patent/ Accused Product A/ '906 Patent

50. Another example of Figure-Ground can be seen when we zoom in on the front perspective view of the '723 patent. Now, the overall body shape becomes the



Primary Gestalt Evaluation- '723 Patent

ground, and we can then see other design features within this frame. Our eye is drawn to the footpad areas because the amount of detail and the line density makes it the darkest area of the image. The detail and density of this area contrasts with the plain surrounding body surfaces creating a strong Figure-Ground gestalt.

### **DEFICIENCIES IN THE PAUL HATCH DECLARATION**

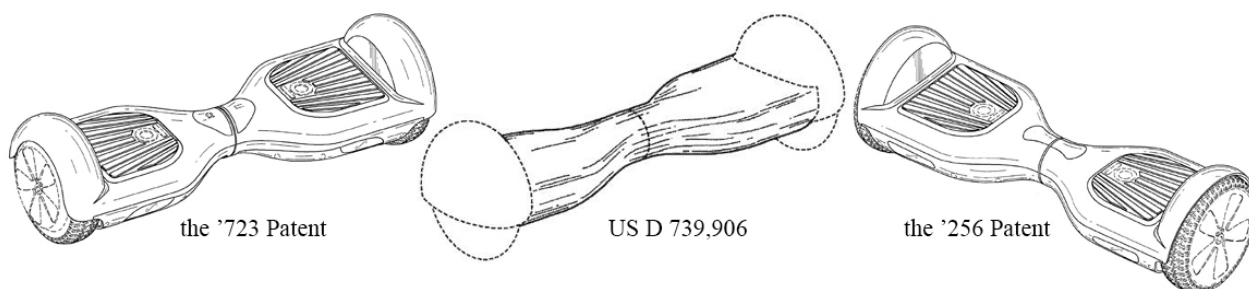
51. On November 12, 2020, Mr. Paul Hatch submitted an expert declaration in support of Plaintiffs motion for a preliminary injunction. In this declaration he provided opinions on the similarities between the design claimed in the Patents-In-Suit and various hoverboard products (collectively, the “Accused Products”). Critically, his declaration fails to examine relevant prior art. Many of the conclusions stated in the Hatch Declaration are overly broad and not based upon sufficient evidence and are therefore incorrect and unreliable.

52. In his examination of the prior art for the '723 and '256 Patents, Mr. Hatch apparently only considered references cited on the face of these patents. He concluded “each of the Patents-In-Suit differed highly from the prior art that



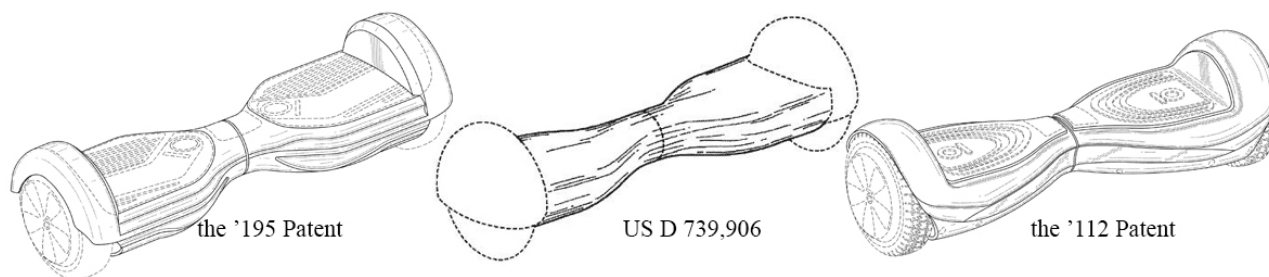
preceded them” (p.19). This conclusory opinion is provided without any further evidence that would support his opinion. I was uncertain which features was he referring to that “differed highly from the prior art”. Overall shape? Proportions? Prominent design features?

53. The '906 Design Patent was filed on March 12, 2013- before any of the



Patents-in-Suit were filed. The overall shape, proportions, and configuration of the '906 patent are strikingly similar to the '723 and '256 patents. Each of these designs plainly show an integrated hourglass body with a relatively flat surface across the top of the main body. Although Mr. Hatch cites the '906 patent in relation to the '195 and '112 patents, but he completely ignores it when analyzing the '723 and '256 patents.

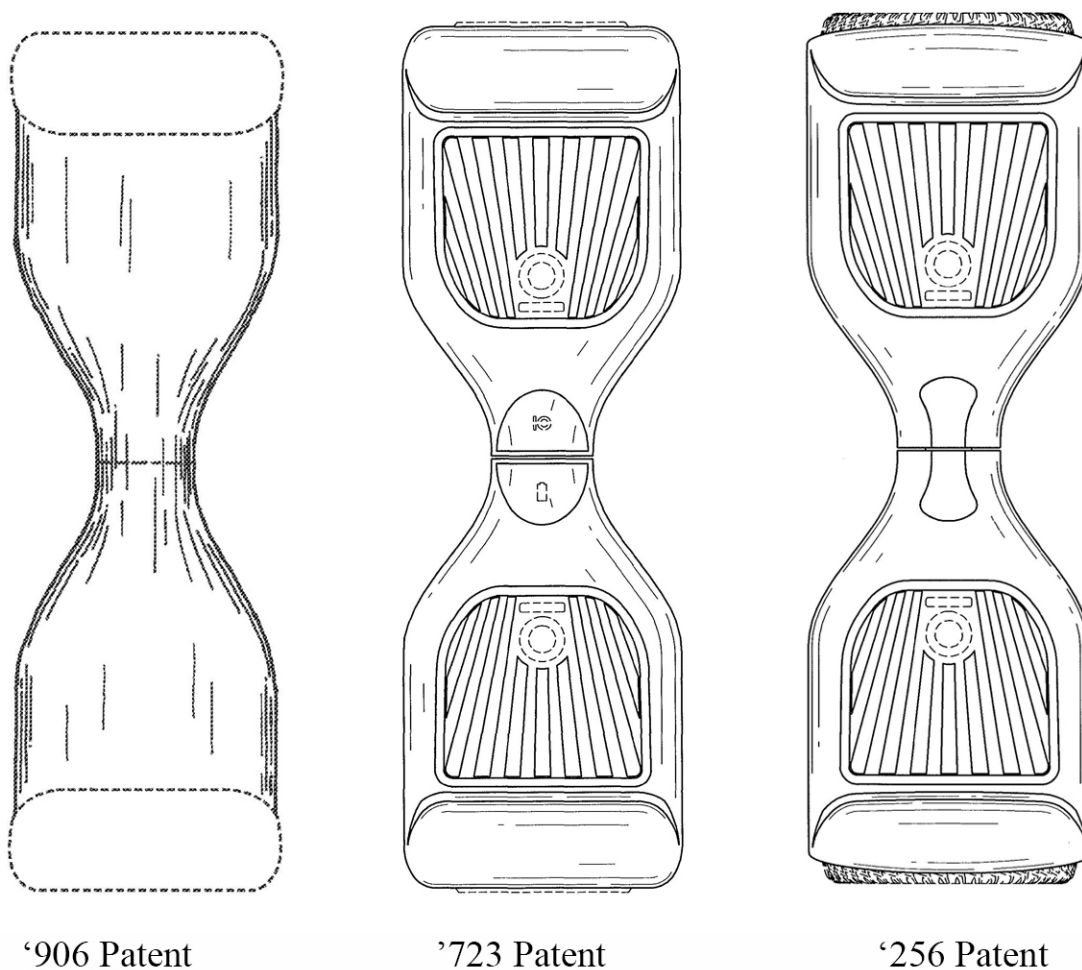
54. Mr. Hatch's failure to examine readily available highly relevant prior art ultimately leads to misrepresentation of the designs as claimed in the Patents-in-Suit. For example, on p.24 Hatch describes alleged infringing products as having “an



integrated 'hourglass' body with a relatively flat surface across the top of the main body”. He never mentions that the '906 Patent also has an integrated hourglass body with relatively flat surface across the top.



55. A comparison of top views clearly shows the similarities between the design of the prior art '906 patent and the designs of the '723 and '256 patents. In my opinion, the “hourglass” shapes are nearly identical.



56. On p.29 Mr. Hatch claims that “the design of the '723 Patent and the Accused Products share the same overall impression”, apparently relying on the presence of an hourglass body with relatively flat surface across the main body. Yet these design features are clearly disclosed in the prior art '906 patent.

57. Other design features of the '7823 Patent are described by Mr. Hatch on p.29 include hopelessly vague descriptions such as “larger radii on the front and back of the underside, and elongated light panels on the front surface. The elongated window for the lights uses more angular, and dynamic lines”. I am a design expert with

multiple degrees in design and over 40 years experience as both a design educator and design practitioner, but I have no clear idea what he is talking about. Perhaps if Mr. Hatch had graphically pointed out these features and compared them side-by-side I would have a better understanding.

58. On pp20 and 21, Mr. Hatch provides his “Analysis of Functionality”. This analysis is insufficient. He provides a summary of his understanding of the legal standards, and then without focusing on any specific areas or features, he casts a sweeping, unsubstantiated opinion “that none of the ornamental designs claimed in the Patents-In-Suit are dictated by function, or otherwise purely functional”. Again, Mr. Hatch provides a conclusory assertion without any supporting evidence.

59. In his “overview of the Accused Products” Mr. Hatch groups products into “species” that “share very similar traits in their format, proportions and certain features, and shared the same overall impression to an Ordinary Observer”. Once again he fails to provide any documentary evidence to support this conclusory opinion. What does he mean by ‘format’? Which ‘certain features’ is he referencing?

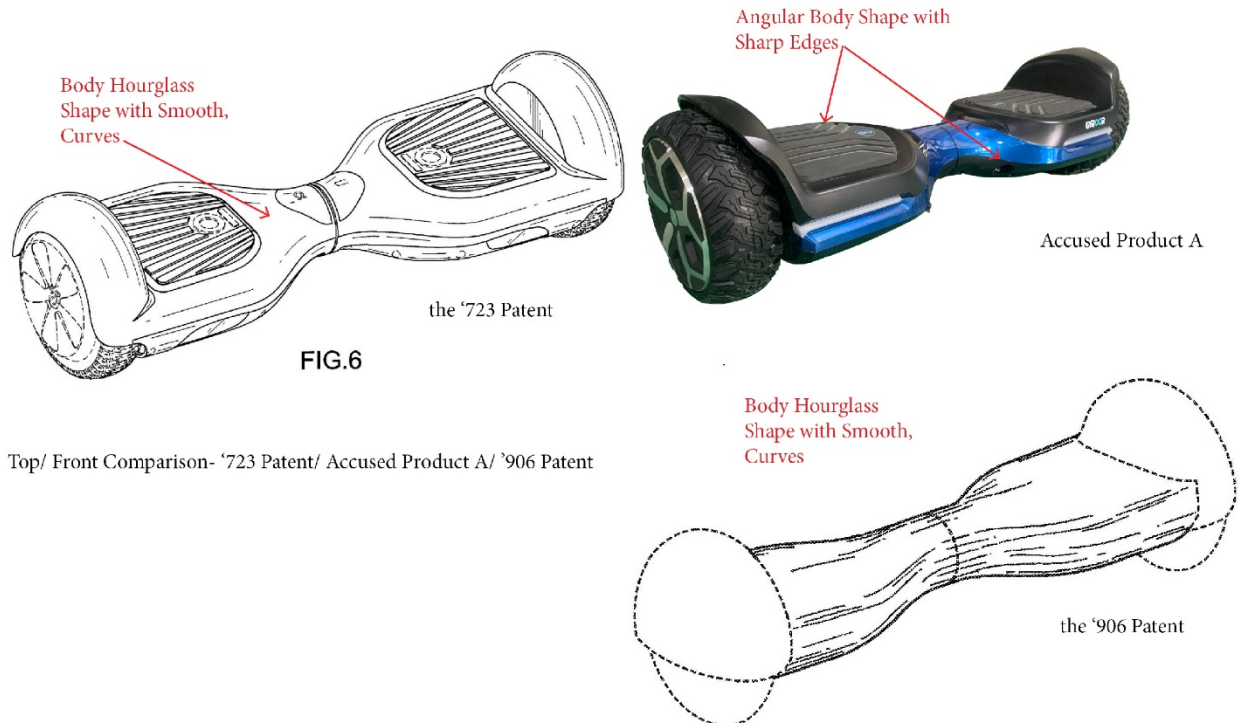
60. The foundation of Mr. Hatch's infringement opinion is based on the assertion that "In the eyes of the ordinary observer, the claimed design of the [Patents-in-Suit] is substantially the same as the visual impression presented by Species I, II, III, IV and V. Also, the Accused Products in Species I-V are closer to the claimed design of the [Patents-in-Suit] than to the cited prior art of the [Patents-in-Suit]." These conclusory assertions are made without supporting evidence.

61. Similarly, Mr. Hatch ignores significant aspects of the accused designs including, for example, the visually prominent design of the top surface foot pads as well as the overall design of the wheel covers (fenders), in rendering his opinions.

## **NON-INFRINGEMENT OF '723 PATENT BY ACCUSED PRODUCT A**

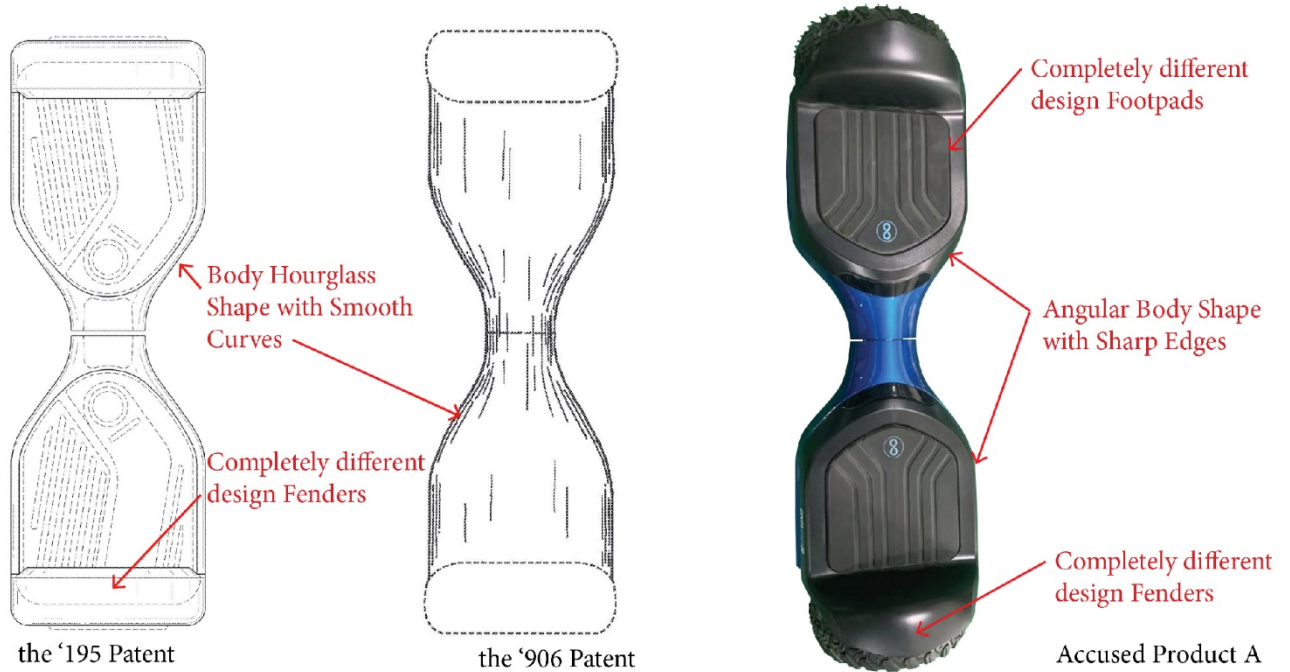
62. I have been informed that the test for infringement requires a side-by-side comparison of the claims of the patent as represented in the figures (usually drawings or photographs) with the Accused Device (often in photographs). Using well-established Gestalt principles, I then compared the differences/similarities between the '723 Patent and Accused Product A through the eyes of “the hypothetical ordinary observer who is conversant with the prior art,” as discussed in *Egyptian Goddess*.

63. To further confirm the results of my analysis, I also compared views of the '723 Patent with corresponding views (as available) of Accused Product A and the closest Alleged Prior Art Design (I chose the '906 Patent) in order to determine how



the similarities and differences between the overall Gestalt as represented in these two designs would contribute to their overall effect. It is my opinion that an ordinary observer would find Accused Products A's overall appearance to be substantially

different from the '723 and the '906 designs (which would appear substantially similar to the Ordinary Observer).



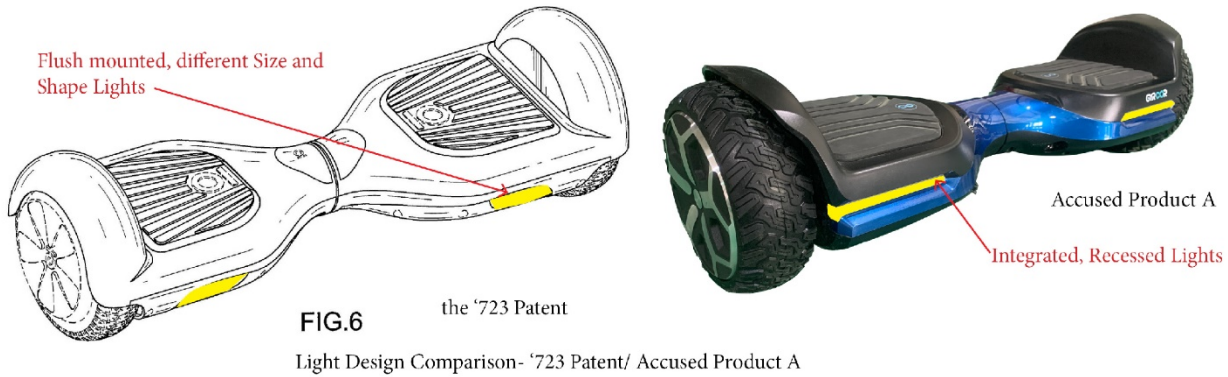
Top Comparison- '195 Patent/ Accused Product A/ '906 Patent

64. Through this process, I determined that the overall Gestalt of the Accused Product A is substantially different from the designs of the prior art '906 Patent and that of the '723 Patent, and that the '723 Patent would appear more similar to the prior art '906 Patent than Accused Product A.

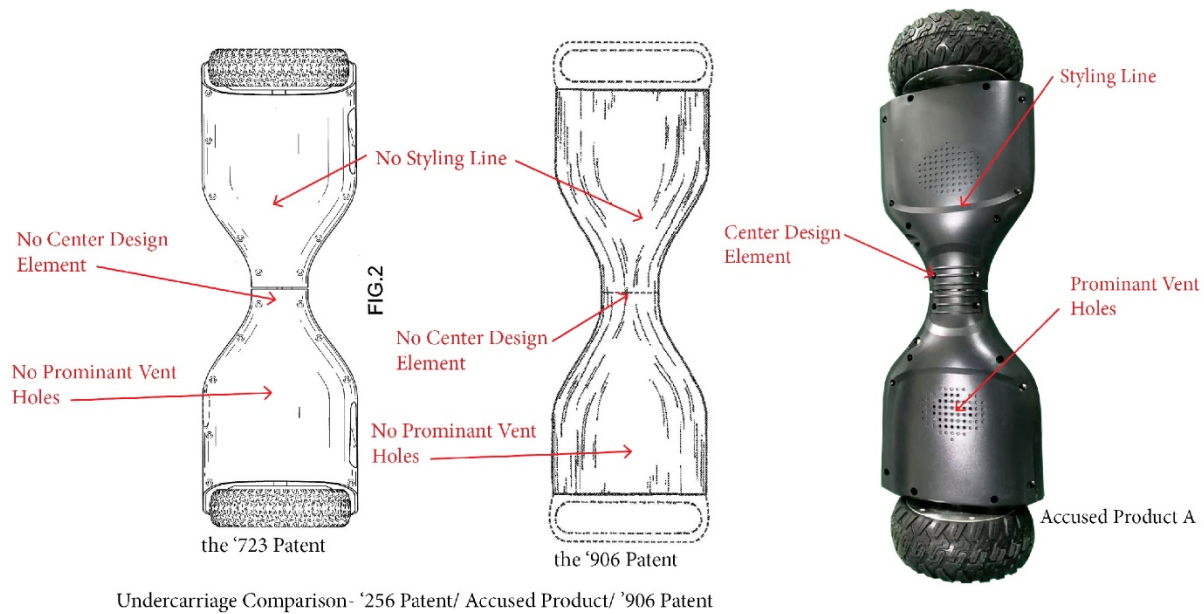
65. There are several key design difference between the design claim of the '723 Patent and the Accused Product A that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '723 claim has prominent elliptical design element in the middle and the Accused Product A is completely different, without any elliptical design element.

66. The front view we can see dramatic and obvious difference in the size, shape,

and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer.



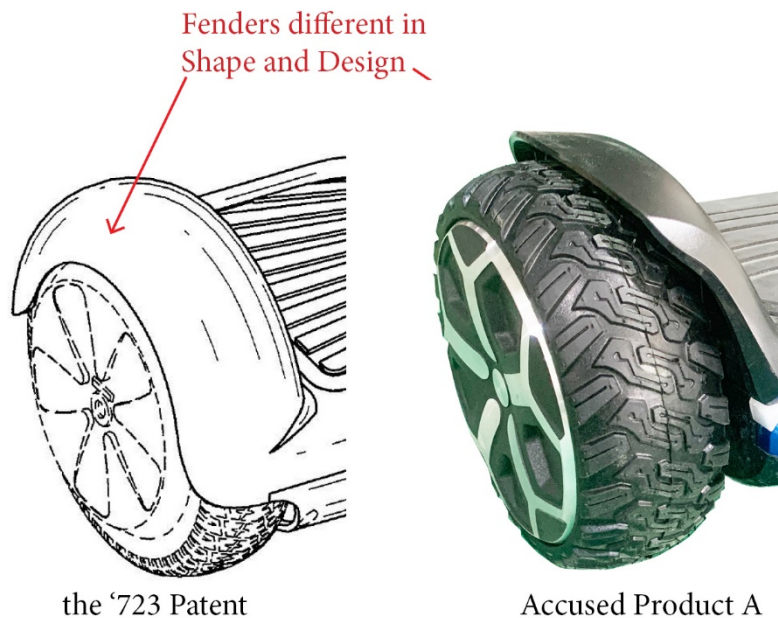
67. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.





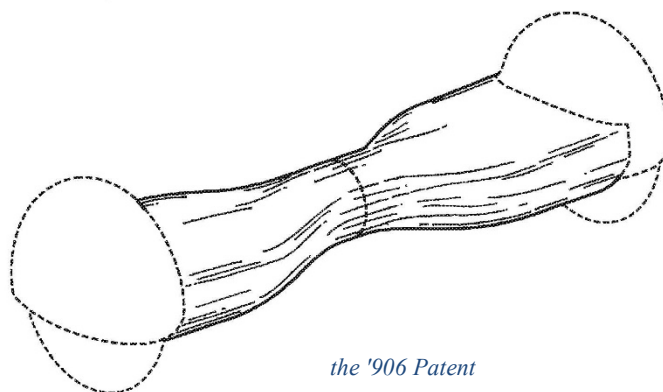
68. A bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.

69. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '723 Patent and the fender design of the Accused Product A. Even to the most casual observer, the differences are significant.



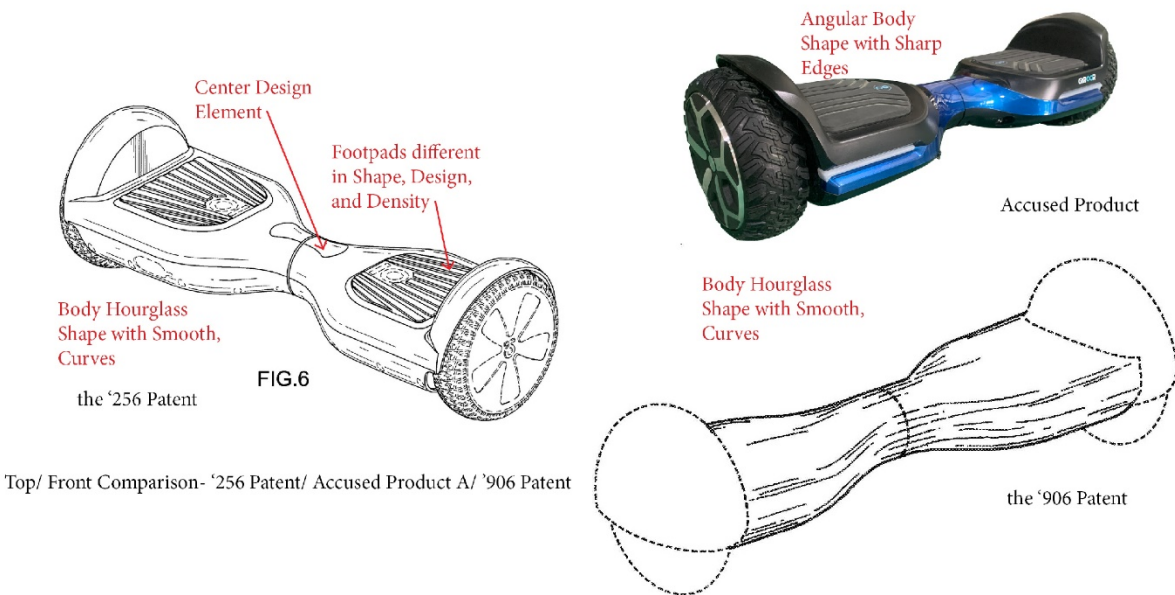
Fender Comparison- '723 Patent/ Accused Product A

70. The overall shape of the '723 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

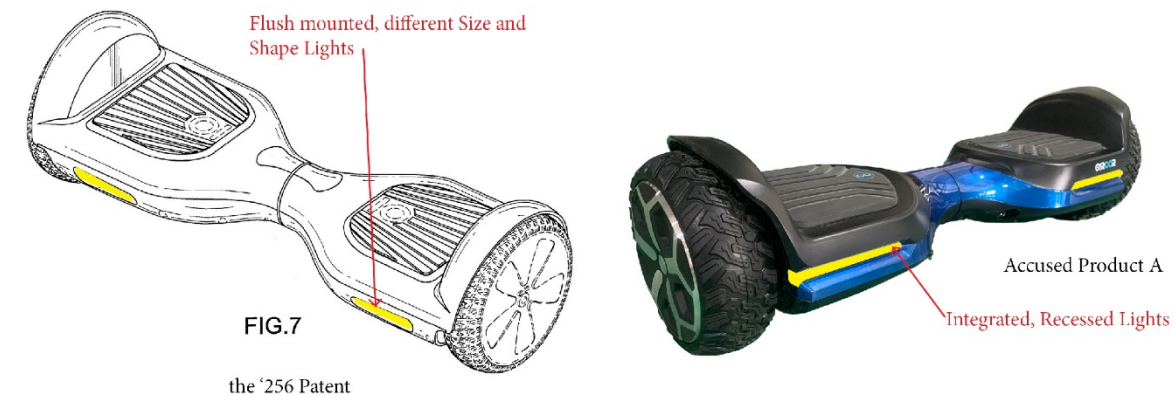


### **NON-INFRINGEMENT OF '256 PATENT BY ACCUSED PRODUCT A**

71. There are several key design difference between the design claim of the '256 Patent and the Accused Product A that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. The overall shape of Accused Product A is angular, with sharp edges- where the forms of the '256 Patent and the Prior art are much softer, smoother. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '256 claim has prominent design element in the middle and the Accused Product A is clean, without any such design element.



72. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer.

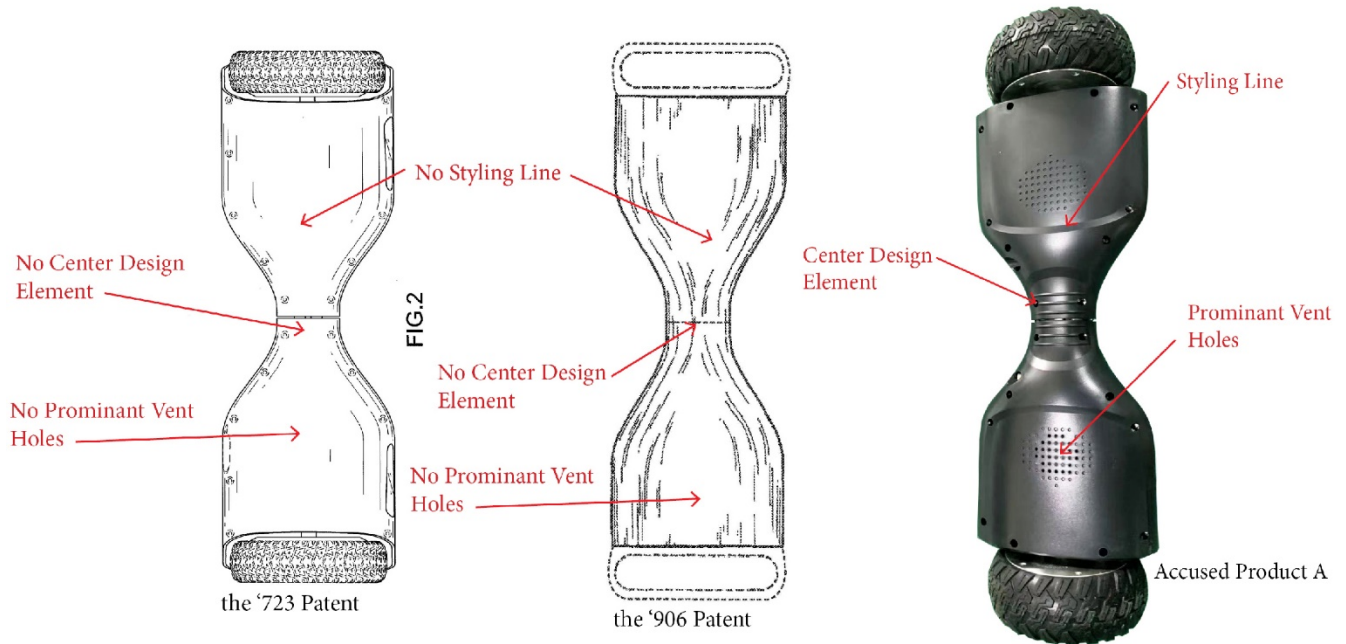


73. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in



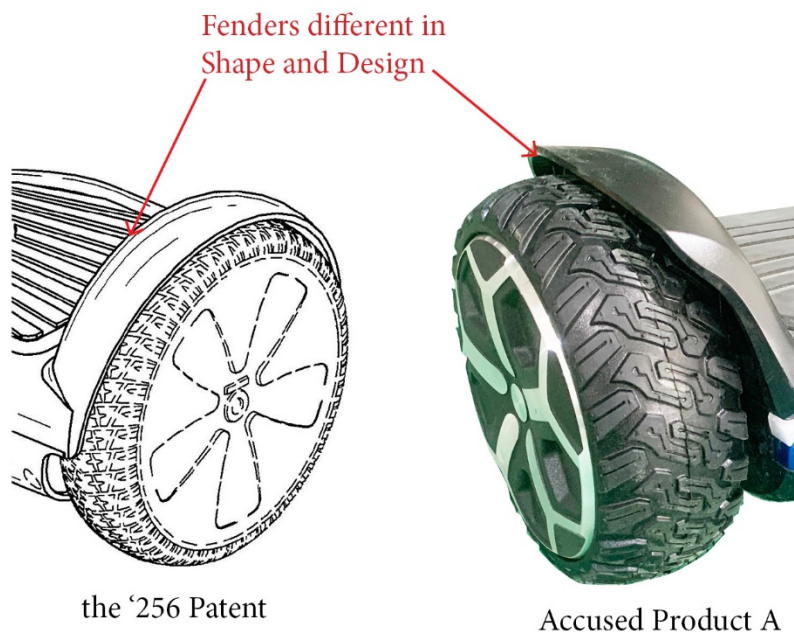
an ordinary observer's understanding the overall visual appearance of the designs.

74. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.



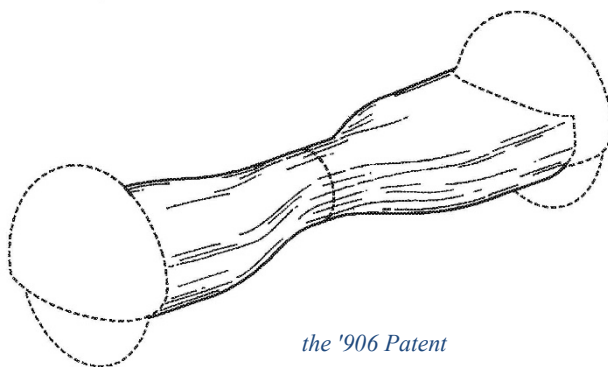
Undercarriage Comparison- '256 Patent/ Accused Product/ '906 Patent

75. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '256 Patent and the fender design of the Accused Product A. Even to the most casual observer, the differences are significant.



Fender Comparison- '256 Patent/ Accused Product A

76. The overall shape of the '256 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate “shoulder width” dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the

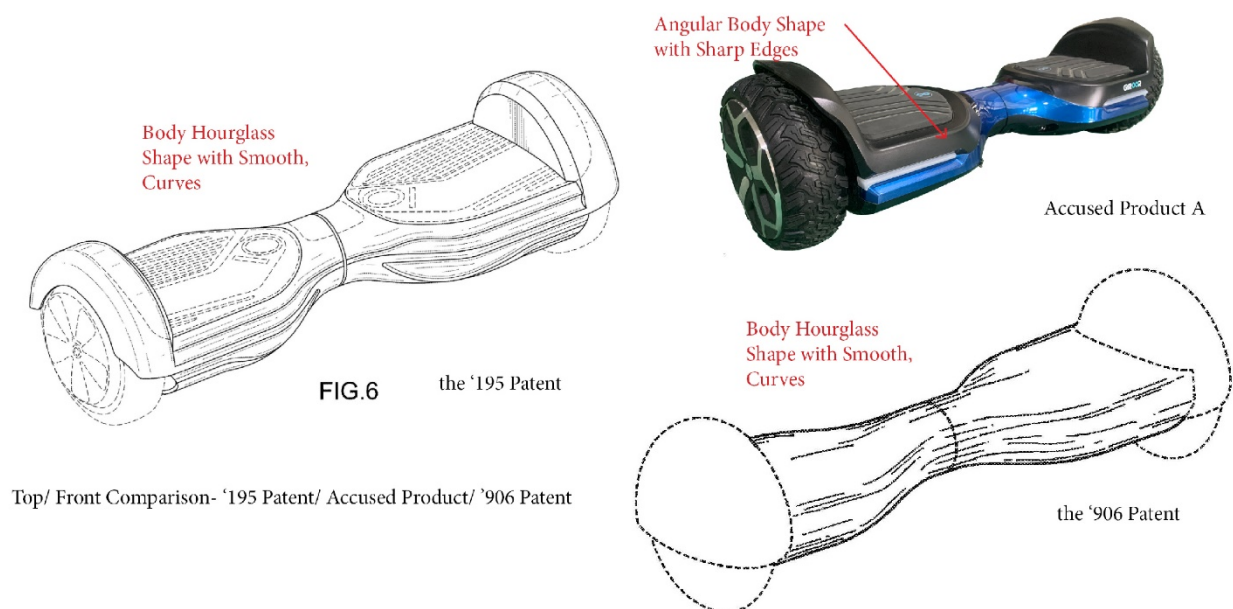


other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the

design of the footpads, fenders, etc, all the more important.

### **NON-INFRINGEMENT OF '195 PATENT BY ACCUSED PRODUCT A**

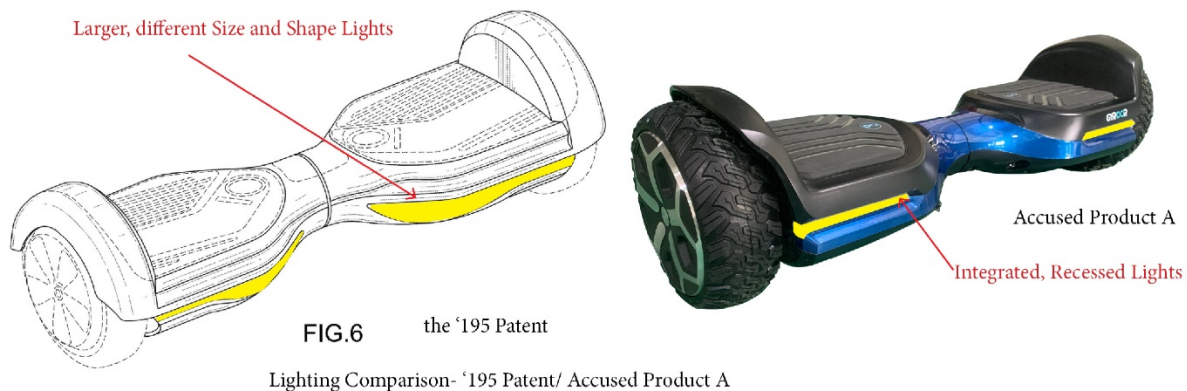
77. There are several key design difference between the design claim of the '195 Patent and the Accused Product that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. Also, an ordinary observer familiar with the prior art



and other products in the marketplace would recognize that the '195 claim has prominent design element in the middle and the Accused Product A is clean, without any such design element.

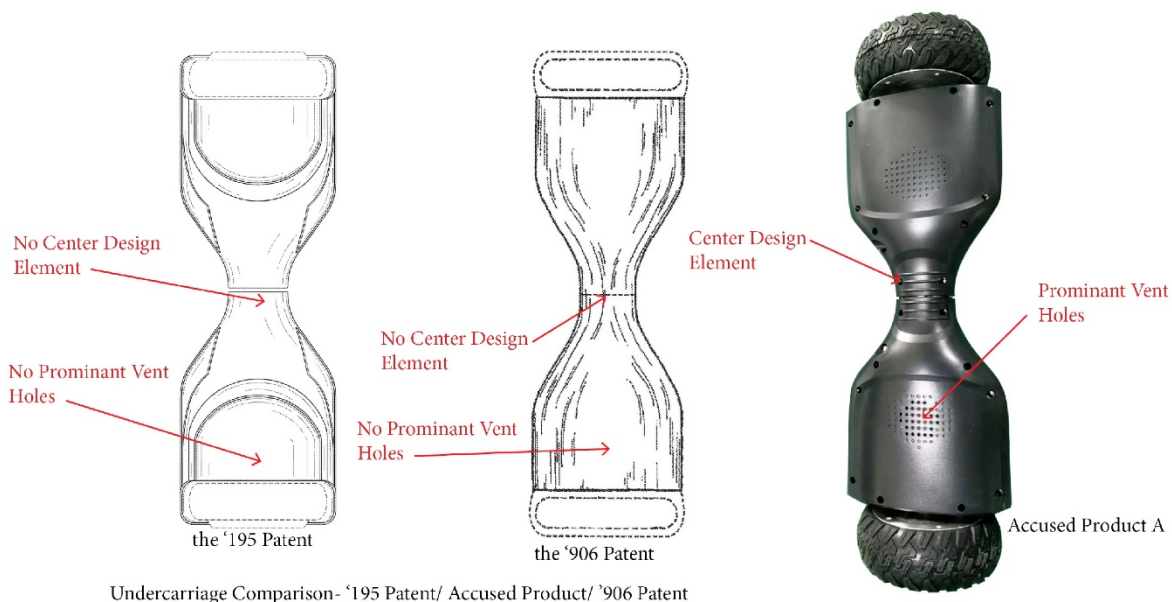
78. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer. The headlight design (which is mirrored on the back as well) as depicted in the '195 Patent is a very prominent design feature substantially

different from the light design of the Accused Product A.

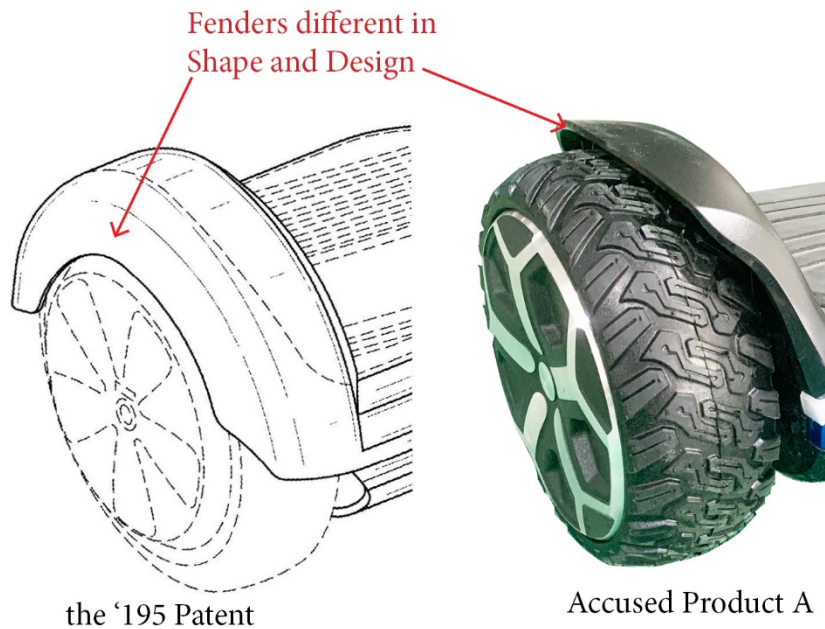


79. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

80. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.

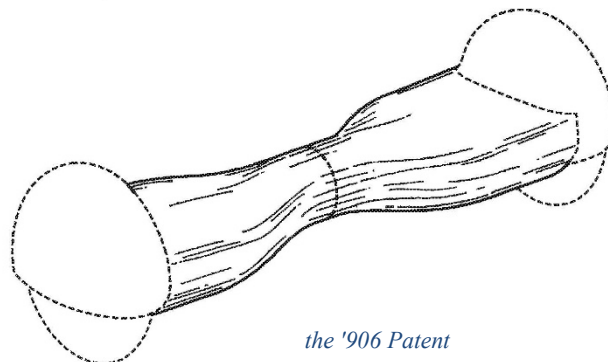


81. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '195 Patent and the fender design of the Accused Product A. Even to the most casual observer, the differences are significant.



Fender Comparison- '195 Patent/ Accused Product A

82. The overall shape of the '195 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width"

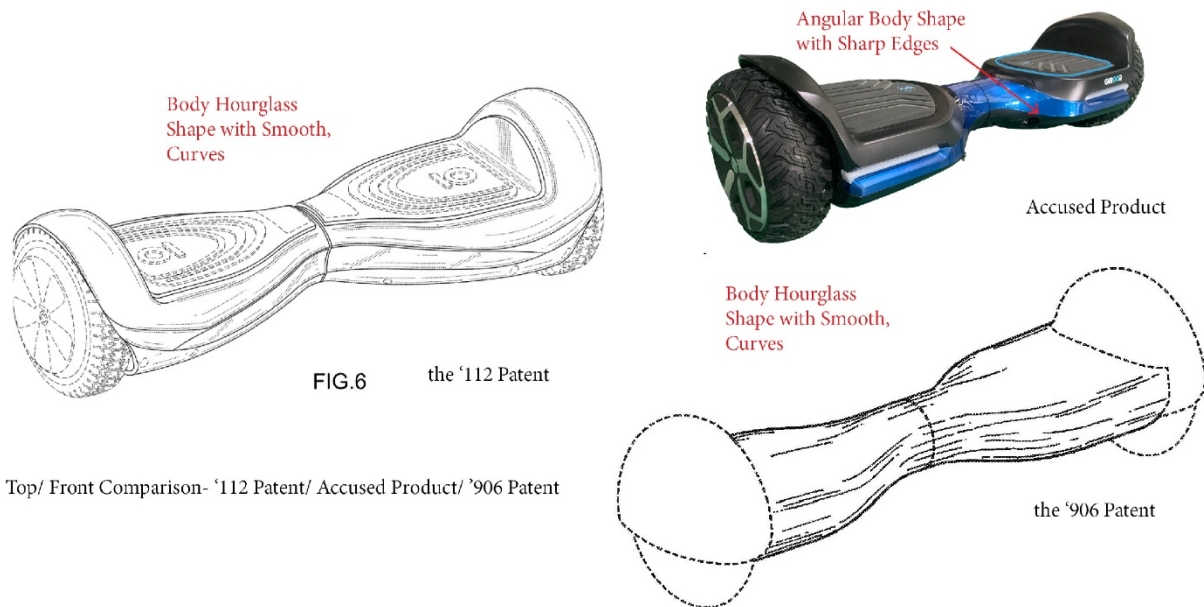




dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

### **NON-INFRINGEMENT OF '112 PATENT BY ACCUSED PRODUCT A**

83. There are several key design difference between the design claim of the '112 Patent and the Accused Product that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and

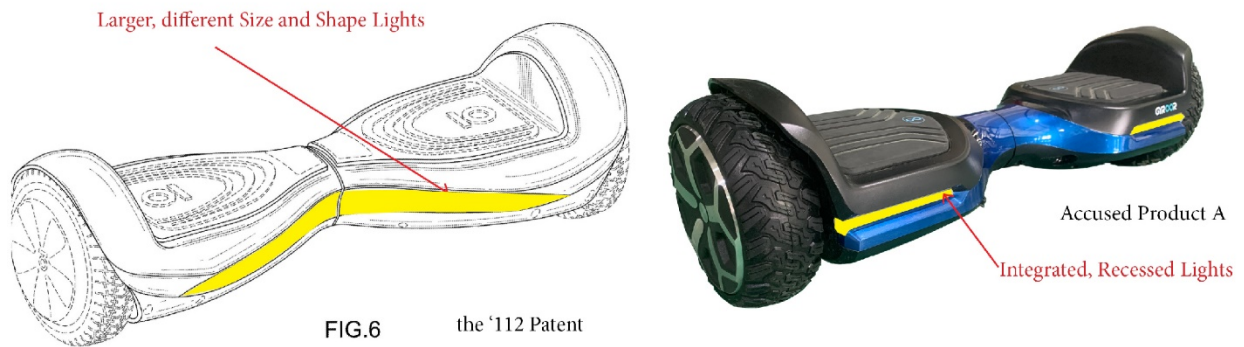


Top/ Front Comparison- '112 Patent/ Accused Product/ '906 Patent

design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '112 claim has prominent design element in the middle and the Accused Product is clean, without any such design element.

84. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer. The headlight design (which is mirrored on the back as well) as depicted in the '112 Patent is a very prominent design feature and in no way would ever be confused with the light design of the Accused Product.

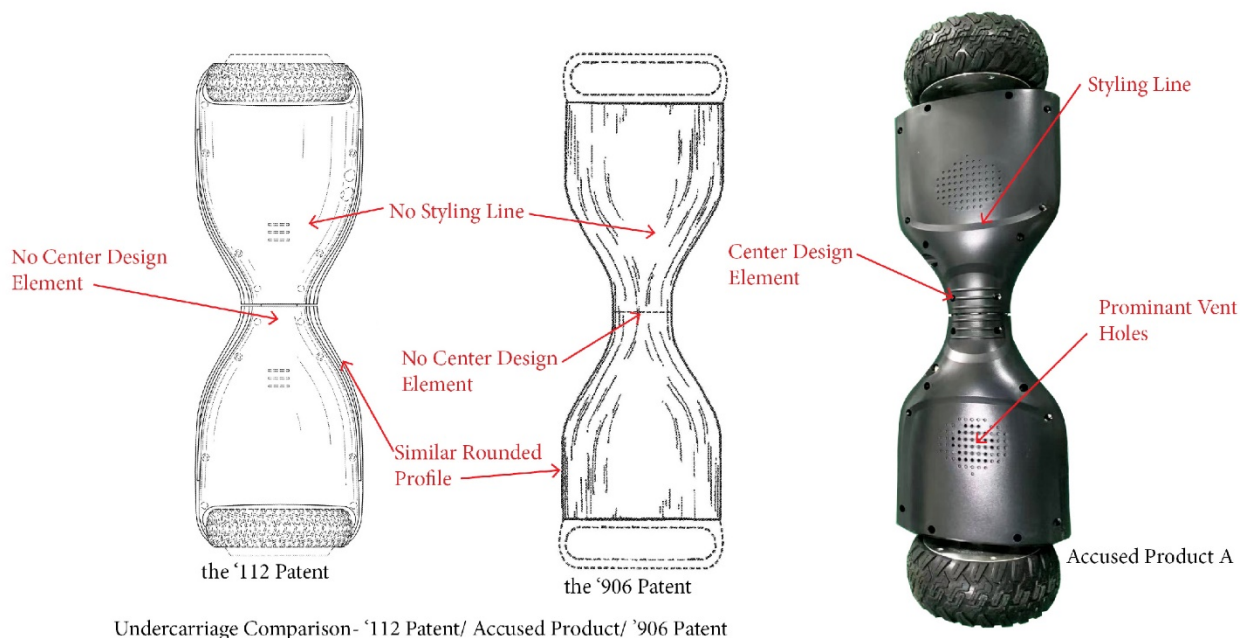
85. Although I consider the Top and Front views to be the most important in my



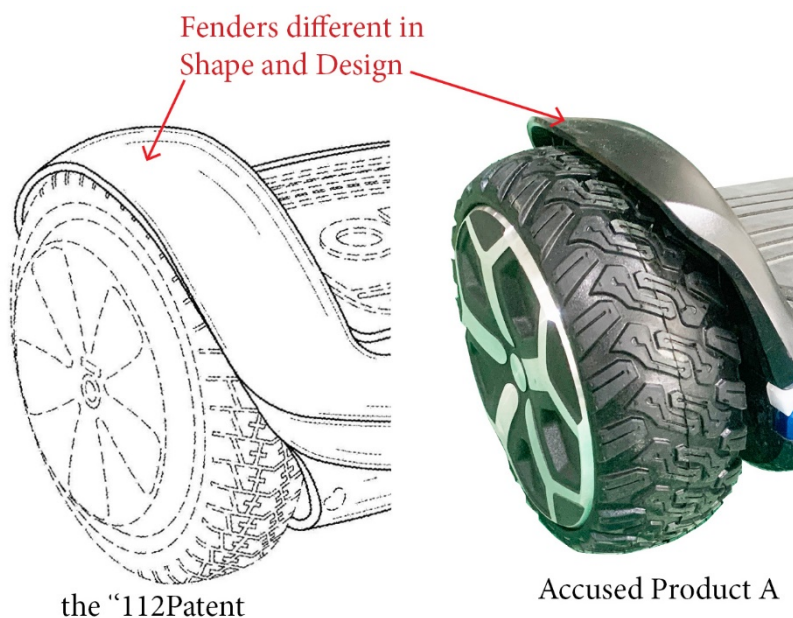
Lighting Comparison- '112 Patent/ Accused Product A

analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

86. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.



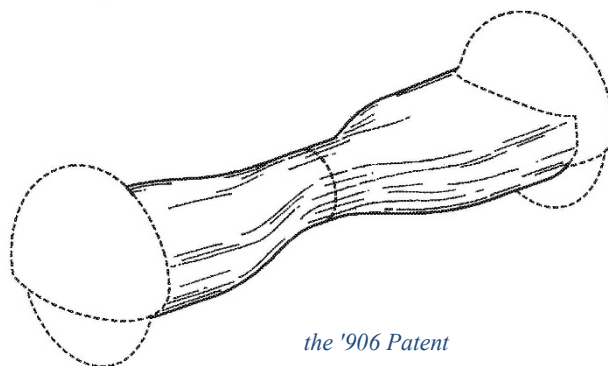
87. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '112 Patent and the fender design of the Accused Product. Even to the most casual observer, the differences are significant.



Fender Comparison- '112 Patent/ Accused Product A



88. The overall shape of the '112 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the

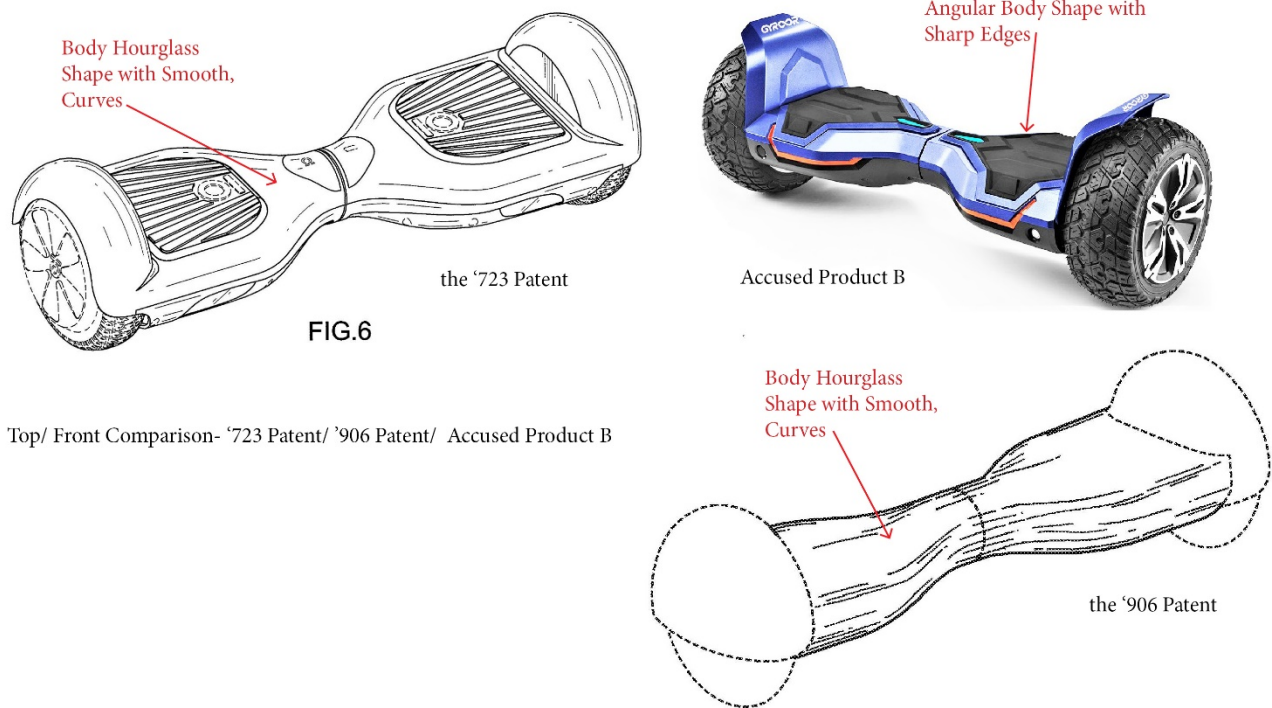


other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

#### **NON-INFRINGEMENT OF '723 PATENT BY ACCUSED PRODUCT B**

89. I have been informed that the test for infringement requires a side-by-side comparison of the claims of the patent as represented in the figures (usually drawings or photographs) with the Accused Device (often in photographs). Using well-established Gestalt principles, I then compared the differences/similarities between the '723 Patent and Accused Product B through the eyes of "the hypothetical ordinary observer who is conversant with the prior art," as discussed in *Egyptian Goddess*.

90. To further confirm the results of my analysis, I also compared views of the '723 Patent with corresponding views (as available) of Accused Product B and the closest Alleged Prior Art Design (I chose the '906 Patent) in order to determine how the similarities and differences between the overall Gestalt as represented in these



two designs would contribute to their overall effect. It is my opinion that an ordinary observer would find Accused Products B's overall appearance to be substantially different from the '723 and the '906 designs (which would appear substantially similar to the Ordinary Observer).

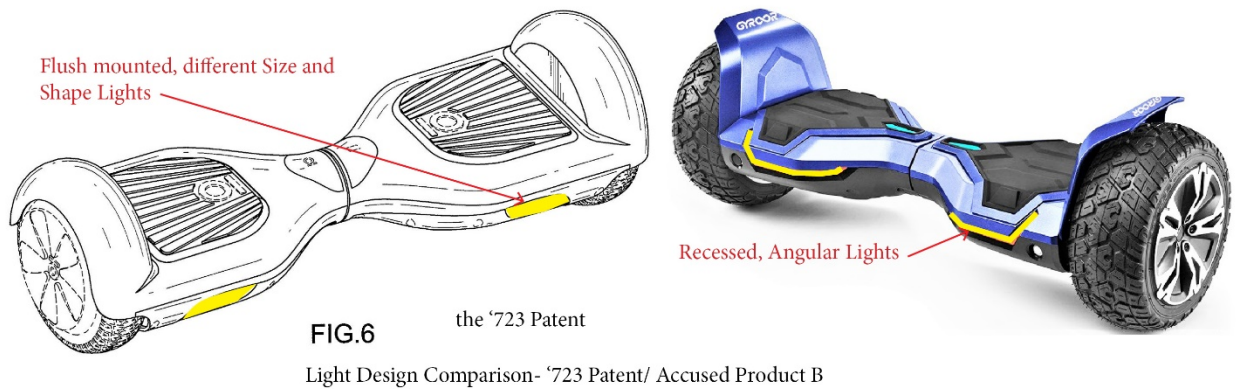
91. Through this process, I determined that the overall Gestalt of the Accused Product B is substantially different from the designs of the prior art '906 Patent and that of the '723 Patent, and that the '723 Patent would appear more similar to the prior art '906 Patent than Accused Product B.

92. There are several key design difference between the design claim of the '723 Patent and the Accused Product B that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '723 claim has prominent elliptical design element in the middle and the Accused Product B is completely different, without any elliptical design element.



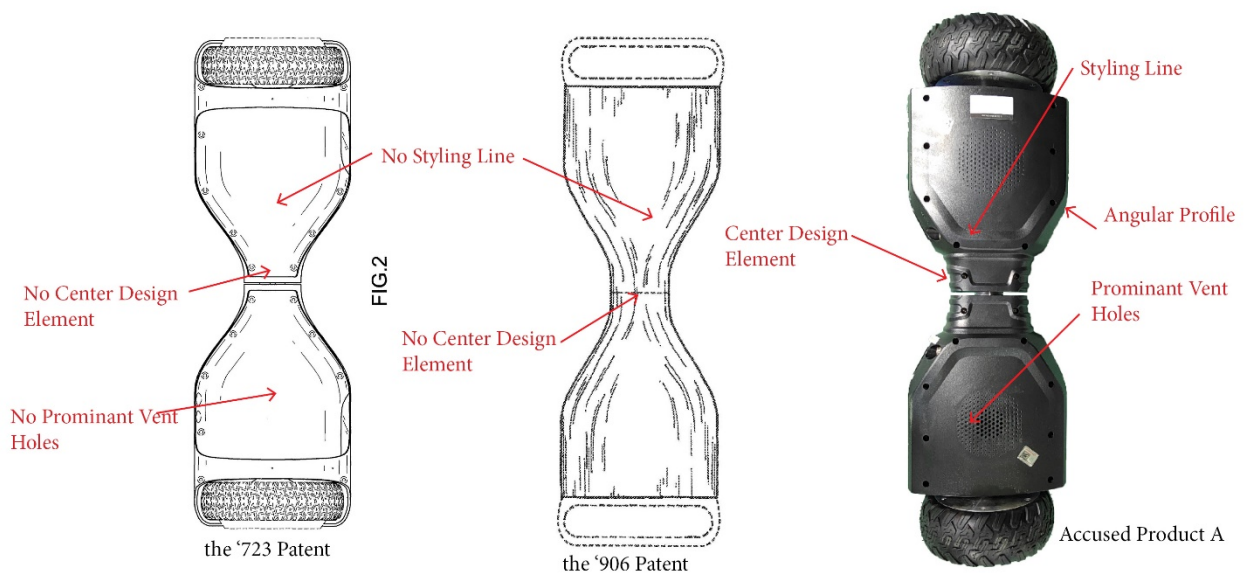
Top Comparison- '723 Patent/ '906 Patent/ Accused Product B

93. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer.



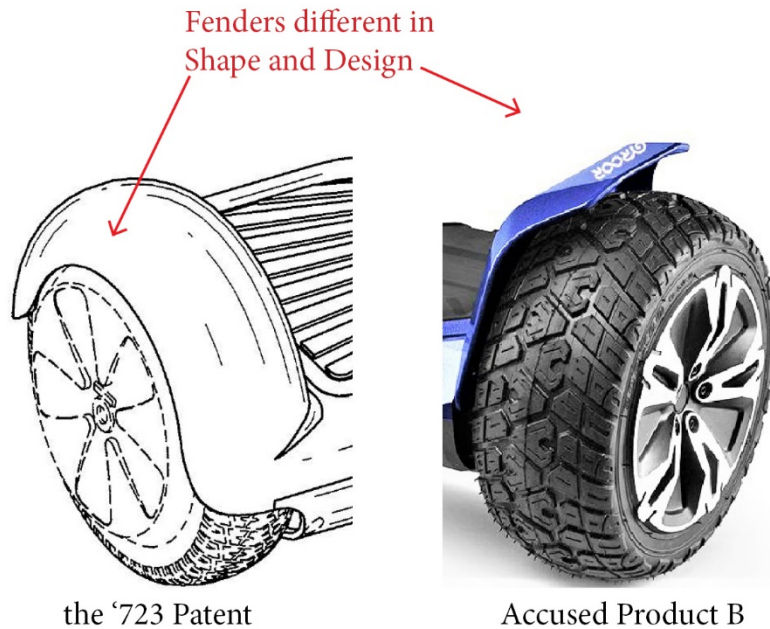
94. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

95. A bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.



Undercarriage Comparison- '723 Patent/'906 Patent/ Accused Product A

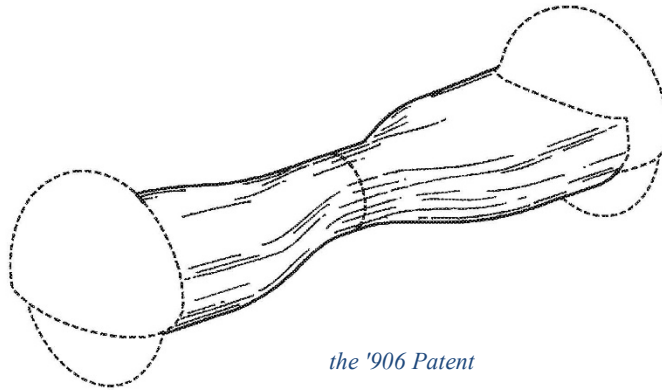
96. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '723 Patent and the fender design of the Accused Product B. Even to the most casual observer, the differences are significant.



Fender Comparison- '723 Patent/ Accused Product B

97. The overall shape of the '723 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate “shoulder width” dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

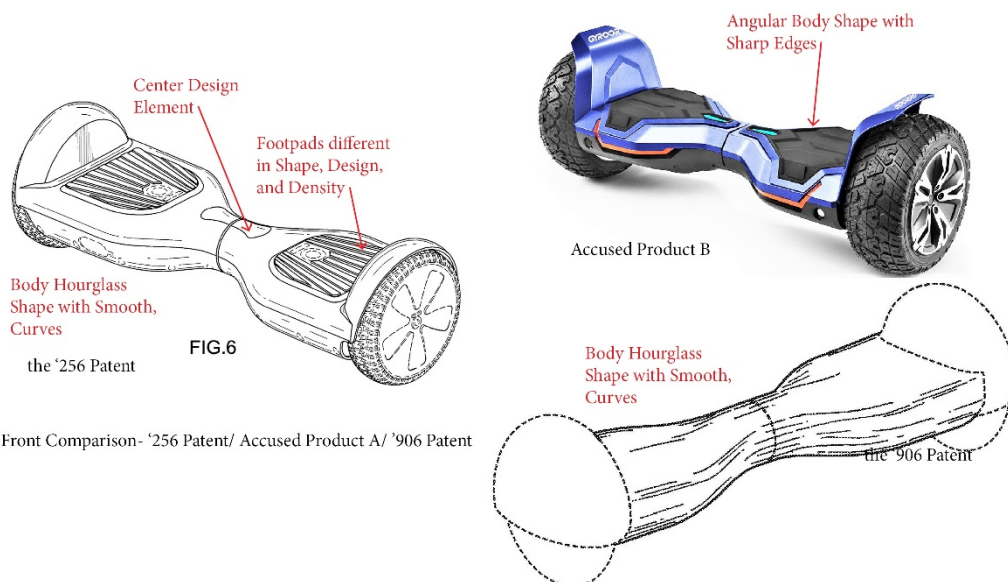




the '906 Patent

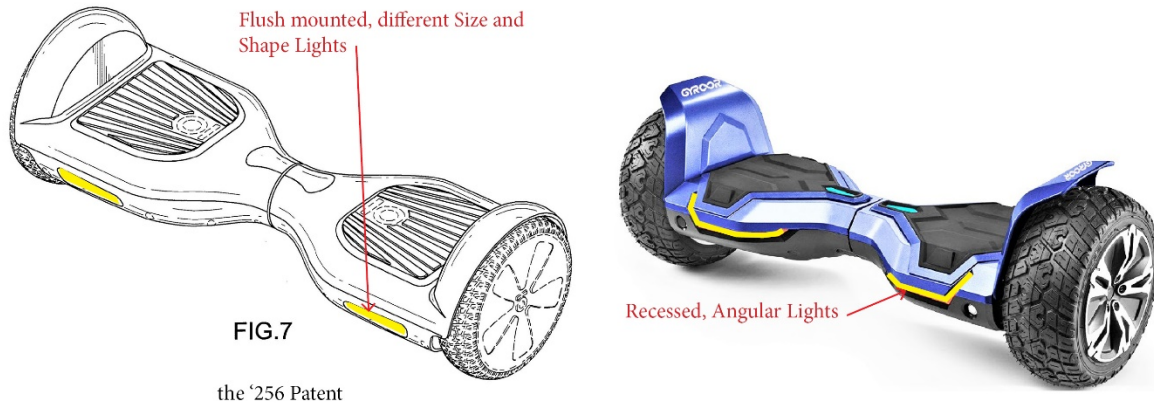
### **NON-INFRINGEMENT OF '256 PATENT BY ACCUSED PRODUCT B**

98. There are several key design difference between the design claim of the '256 Patent and the Accused Product B that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. The overall shape of Accused Product B is angular, with sharp edges- where the forms of the '256 Patent and the Prior art are much softer, smoother. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '256 claim has prominent design element in the middle and the Accused Product B is clean, without any such design element.



Top/ Front Comparison- '256 Patent/ Accused Product A/ '906 Patent

99. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer.

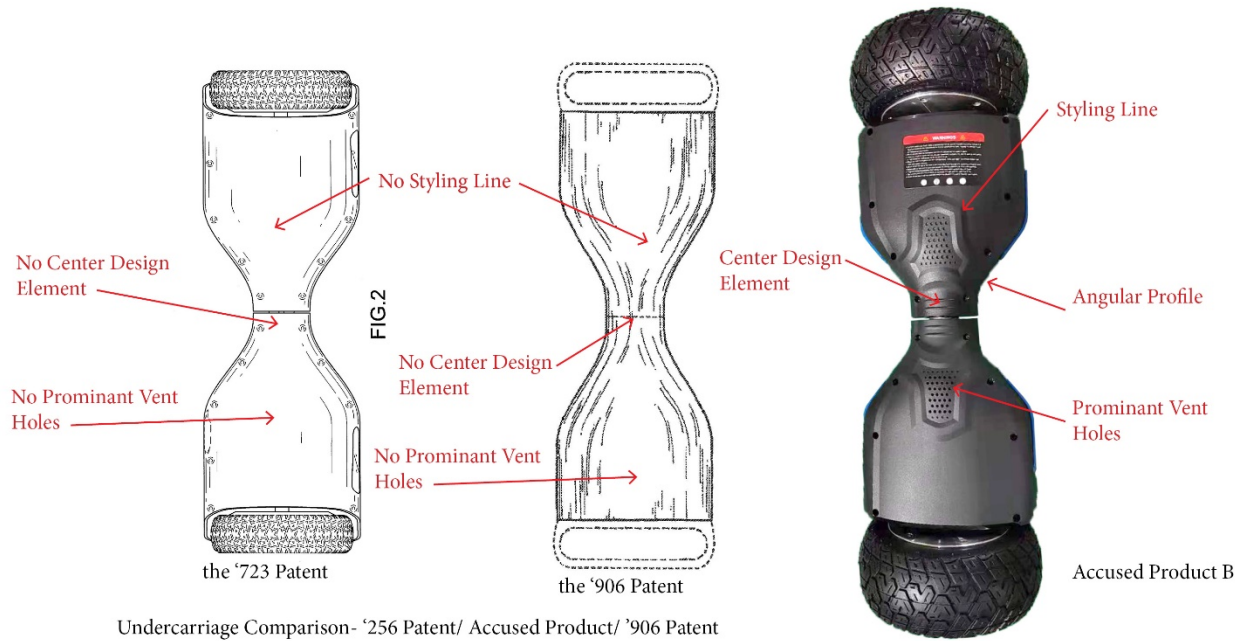


Lighting Comparison- '256 Patent/ Accused Product B

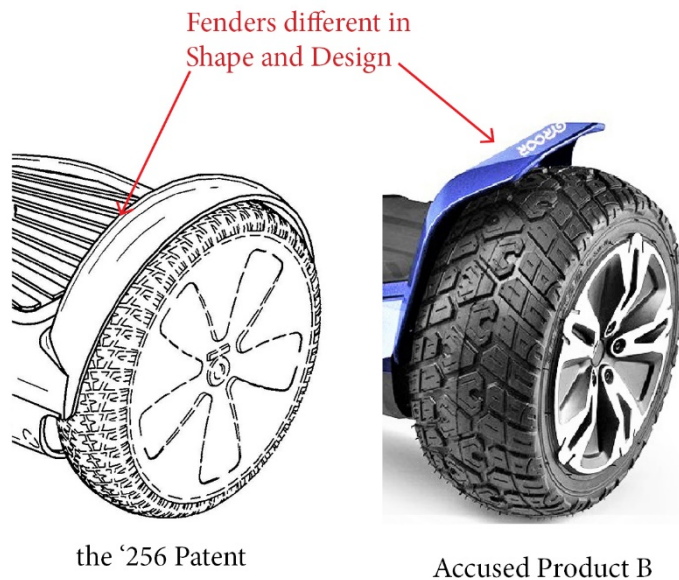
100. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

101. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.



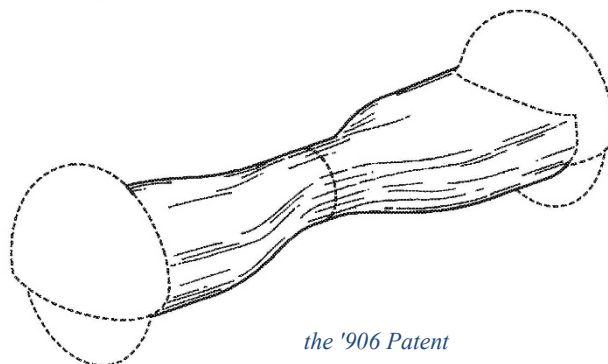


102. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '256 Patent and the fender design of the Accused Product B. Even to the most casual observer, the differences are significant.



Fender Comparison- '256 Patent/ Accused Product B

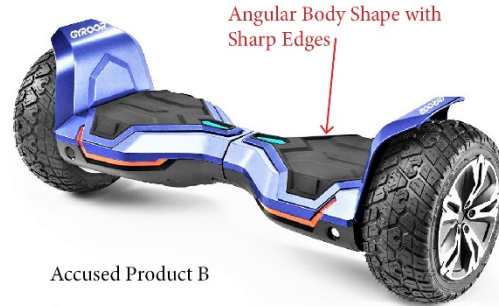
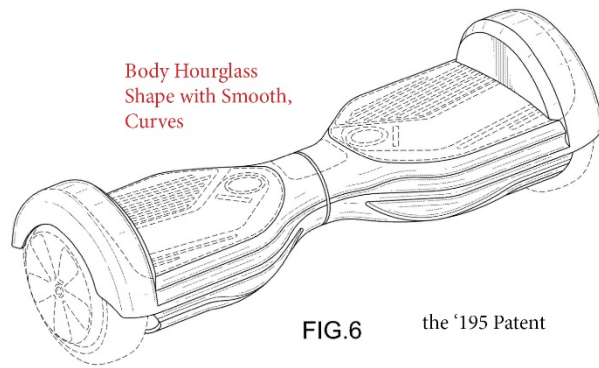
103. The overall shape of the '256 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the



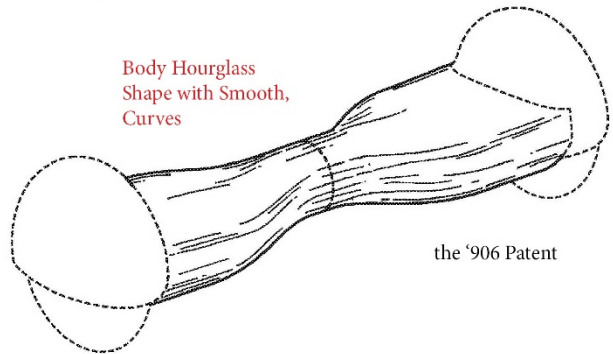
other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

#### **NON-INFRINGEMENT OF '195 PATENT BY ACCUSED PRODUCT B**

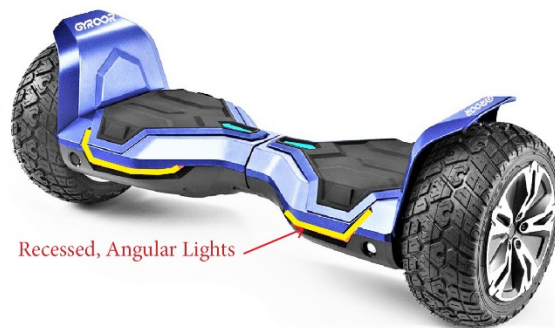
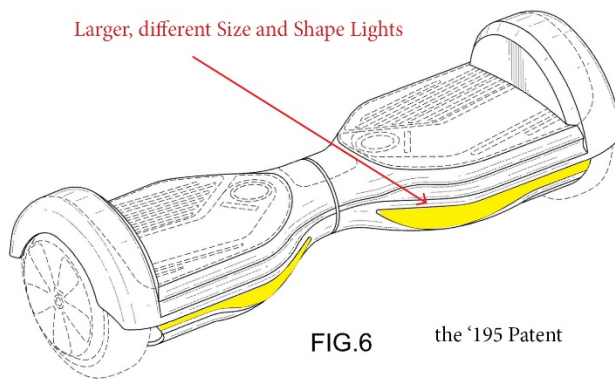
104. There are several key design difference between the design claim of the '195 Patent and the Accused Product that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '195 claim has prominent design element in the middle and the Accused Product B is clean, without any such design element.



Top/ Front Comparison- '195 Patent/ Accused Product/ '906 Patent



105. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer. The headlight design (which is mirrored on the back as well) as depicted in the '195 Patent is a very prominent design feature substantially different from the light design of the Accused Product B.

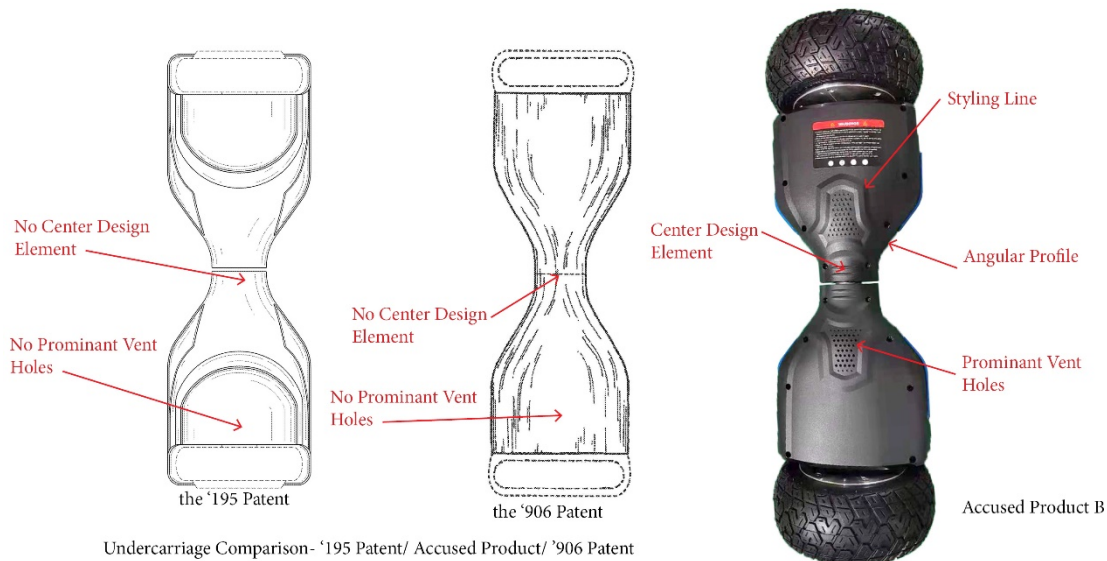


Lighting Comparison- '195 Patent/ Accused Product B

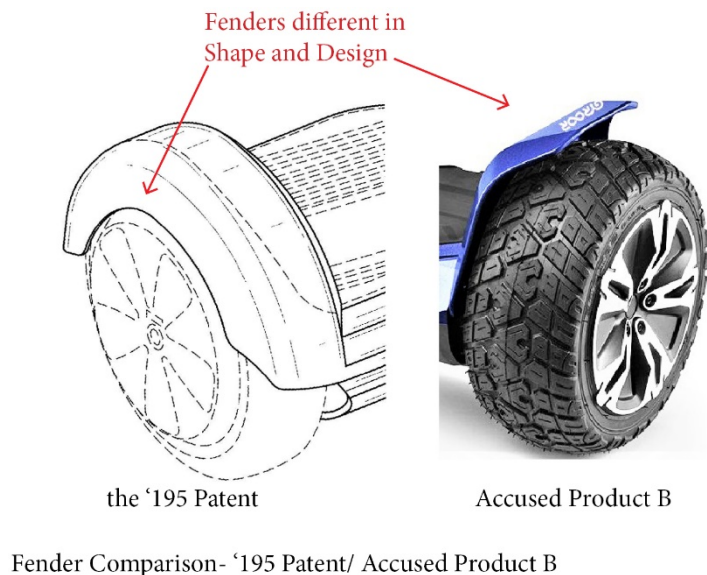
106. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in

brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

107. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.

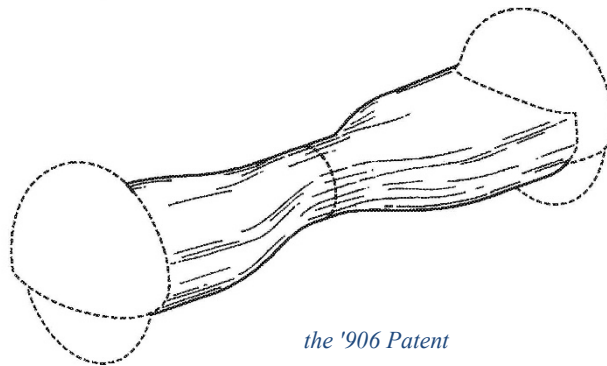


108. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '195 Patent and the



fender design of the Accused Product B. Even to the most casual observer, the differences are significant.

109. The overall shape of the '195 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the

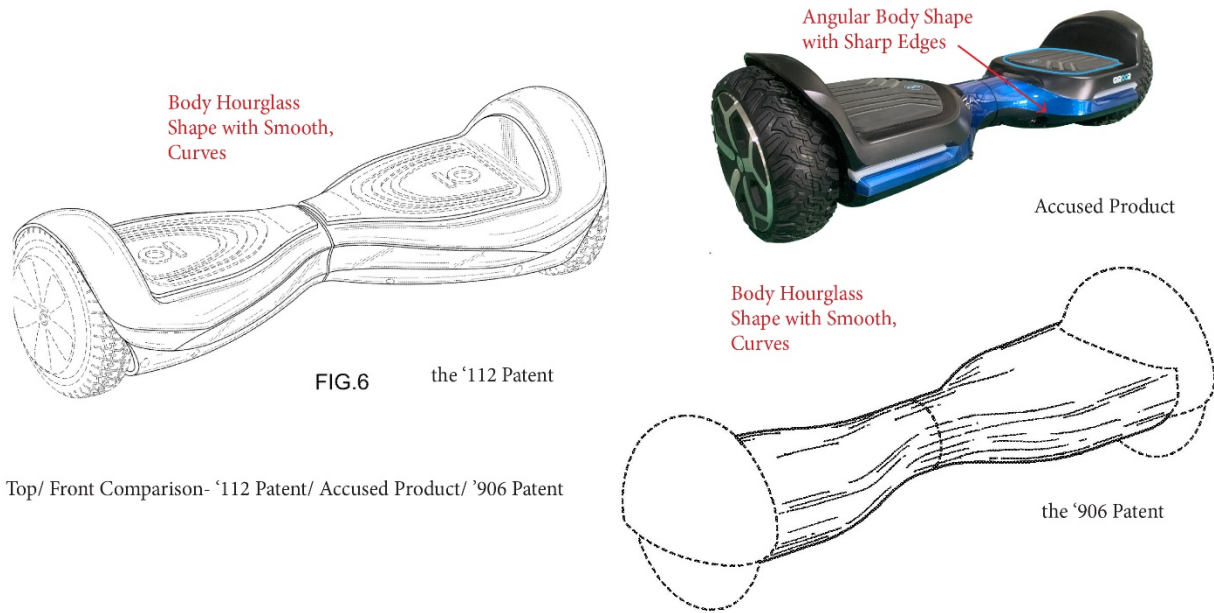


other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

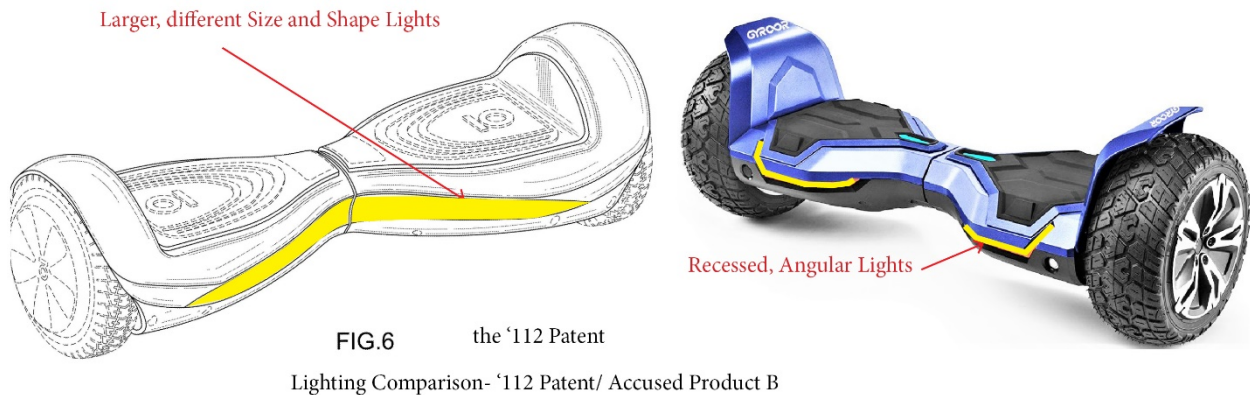
### **NON-INFRINGEMENT OF '112 PATENT BY ACCUSED PRODUCT B**

110. There are several key design difference between the design claim of the '112 Patent and the Accused Product B that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '112 claim has rounded fenders and the Accused Product B is narrower and more angled.





111. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer. The headlight design (which is mirrored on the back as well) as depicted in the '112 Patent is a very prominent design feature and in no way would ever be confused with the light design of the Accused Product B.



112. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in

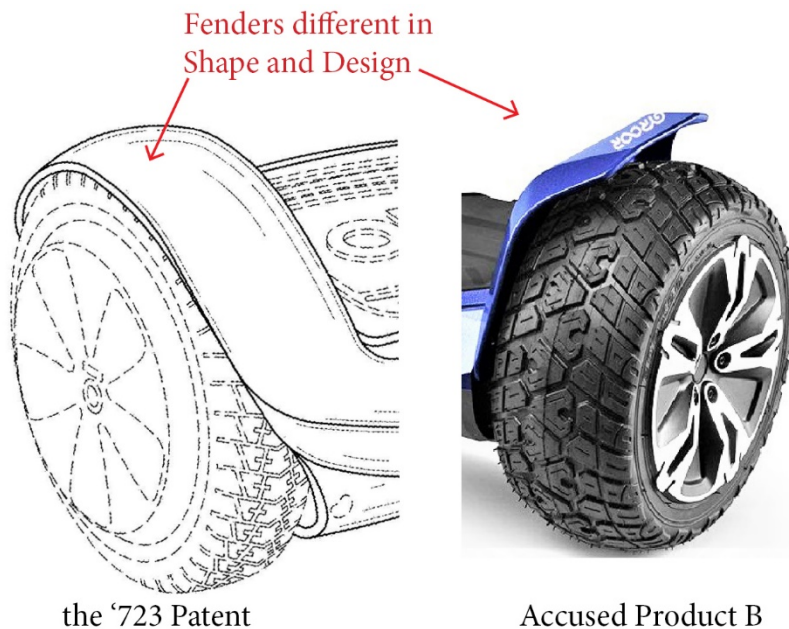


an ordinary observer's understanding the overall visual appearance of the designs.

113. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.

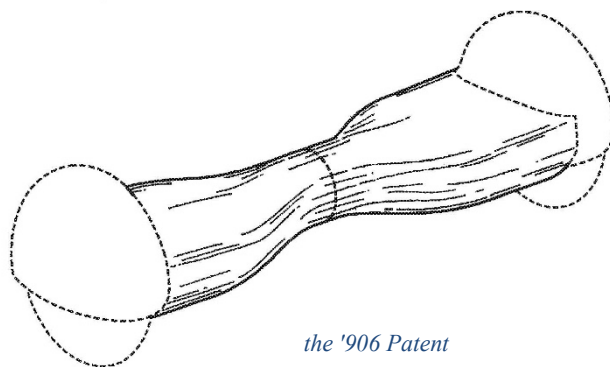


114. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '112 Patent and the fender design of the Accused Product B. Even to the most casual observer, the differences are significant.



Fender Comparison- '112Patent/ Accused Product B

115. The overall shape of the '112 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate “shoulder width” dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the

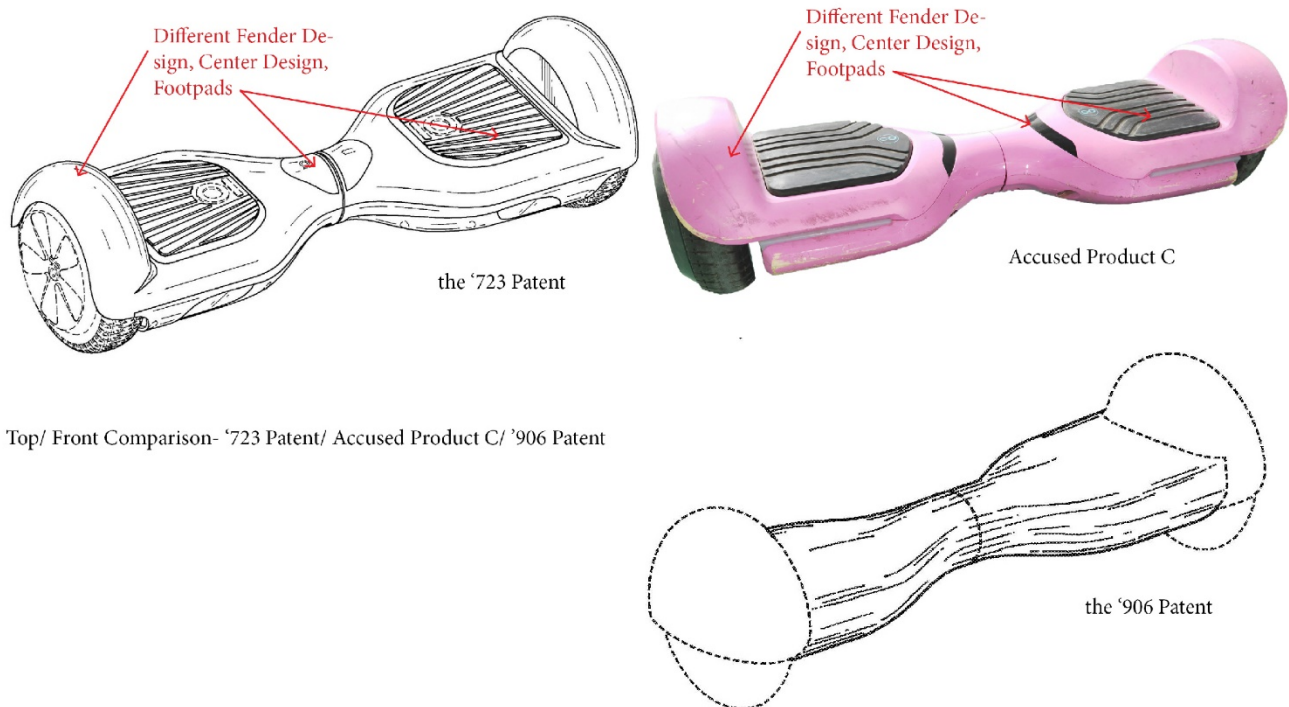


other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

## **NON-INFRINGEMENT OF '723 PATENT BY ACCUSED PRODUCT C**

116. I have been informed that the test for infringement requires a side-by-side comparison of the claims of the patent as represented in the figures (usually drawings or photographs) with the Accused Device (often in photographs). Using well-established Gestalt principles, I then compared the differences/similarities between the '723 Patent and Accused Product C through the eyes of “the hypothetical ordinary observer who is conversant with the prior art,” as discussed in *Egyptian Goddess*.

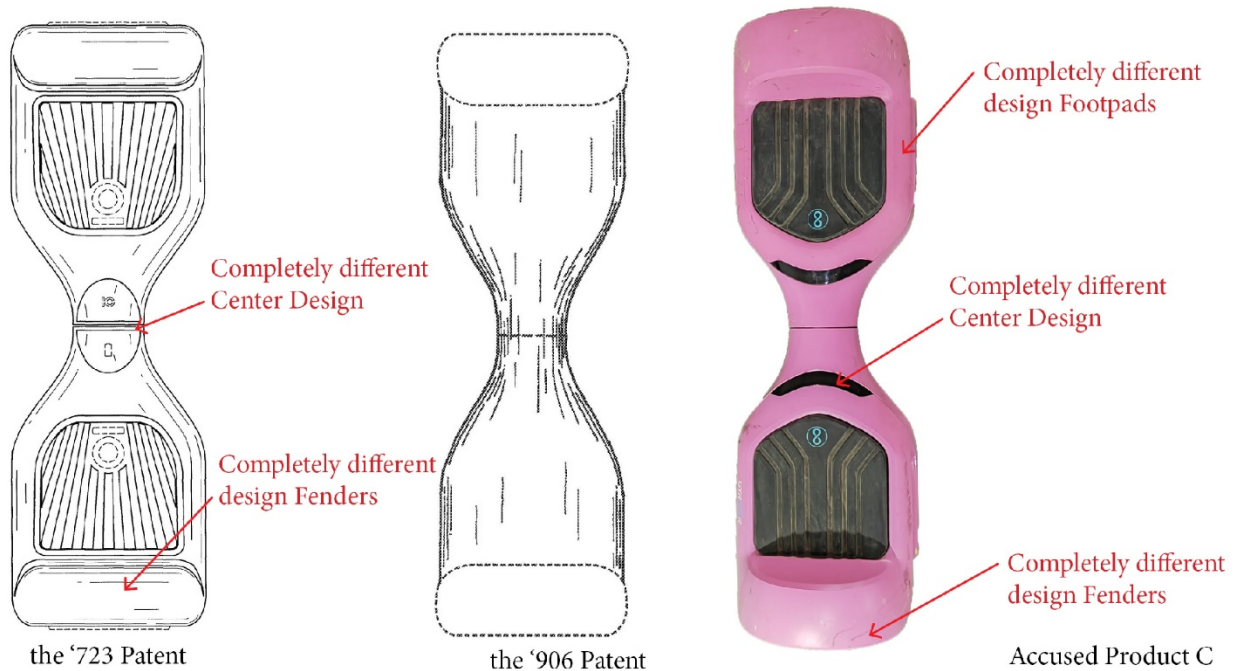
117. To further confirm the results of my analysis, I also compared views of the '723 Patent with corresponding views (as available) of Accused Product C and the closest Alleged Prior Art Design (I chose the '906 Patent) in order to determine how the similarities and differences between the overall Gestalt as represented in these



two designs would contribute to their overall effect. It is my opinion that an ordinary observer would find Accused Products C's overall appearance to be substantially different from the '723 and the '906 designs (which would appear substantially

similar to the Ordinary Observer).

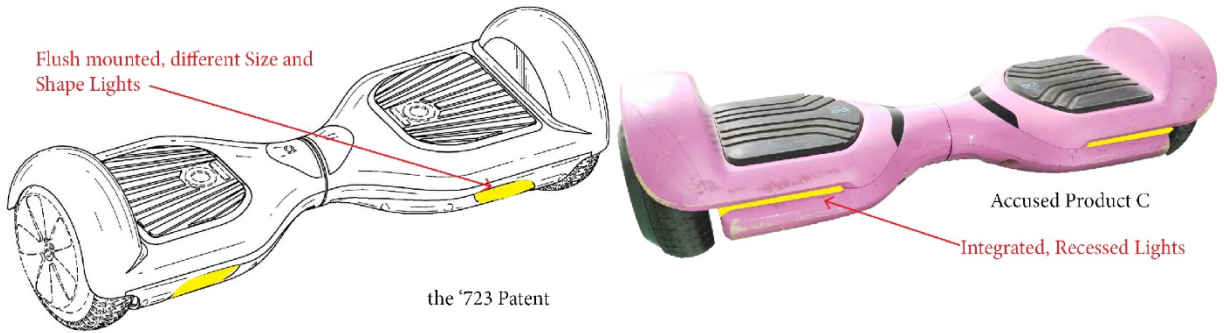
118. Through this process, I determined that the overall Gestalt of the Accused Product A is substantially different from the designs of the prior art '906 Patent and that of the '723 Patent, and that the '723 Patent would appear more similar to the prior art '906 Patent than Accused Product C.



Top Comparison- '723 Patent/ Accused Product C/ '906 Patent

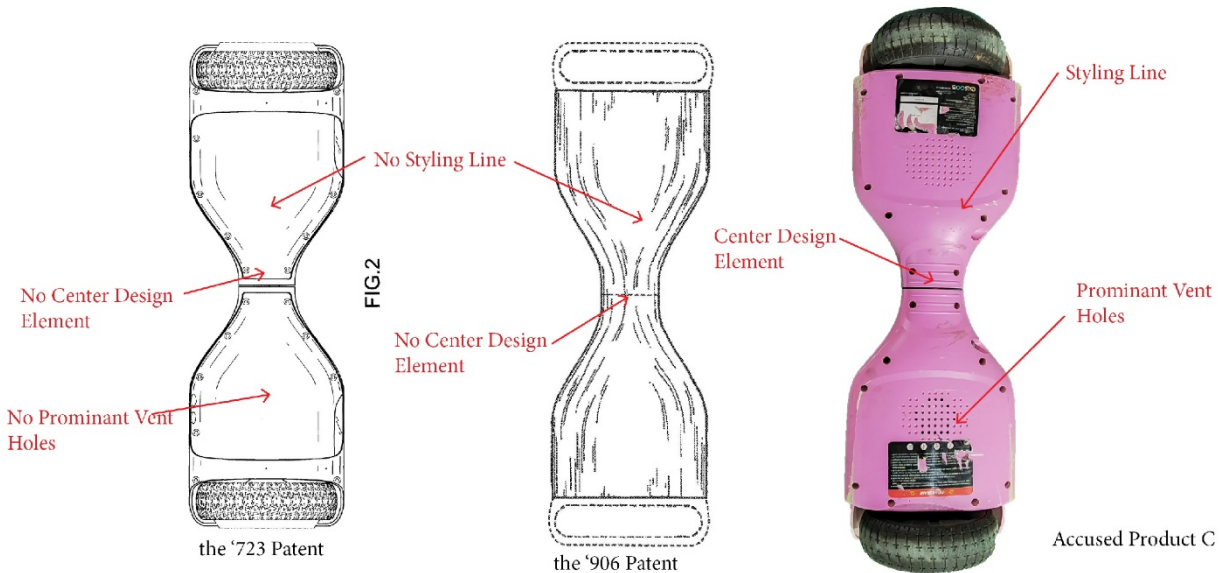
119. There are several key design difference between the design claim of the '723 Patent and the Accused Product C that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '723 claim has prominent elliptical design element in the middle and the Accused Product C is completely different, without any elliptical design element.

120. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer.



Light Design Comparison- '723 Patent/ Accused Product C

121. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

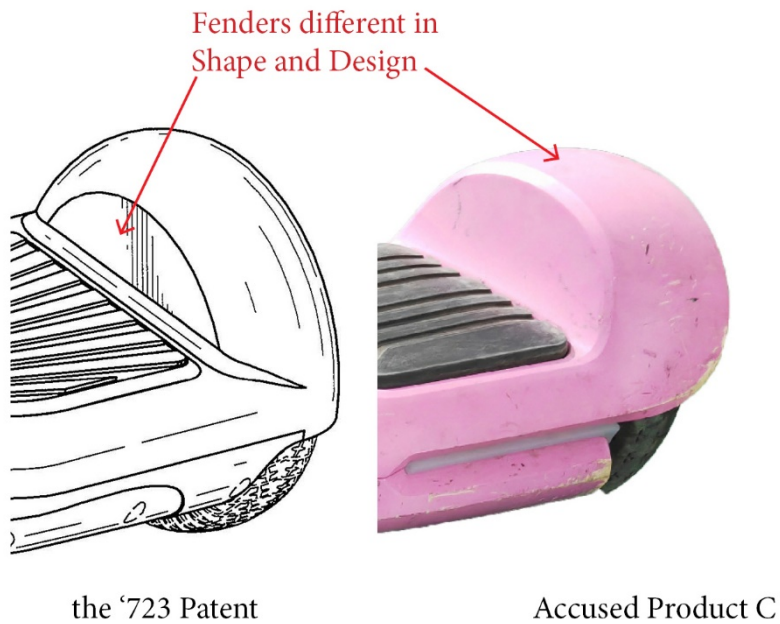


Undercarriage Comparison- '723 Patent/'906 Patent/ Accused Product C



122. A bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.

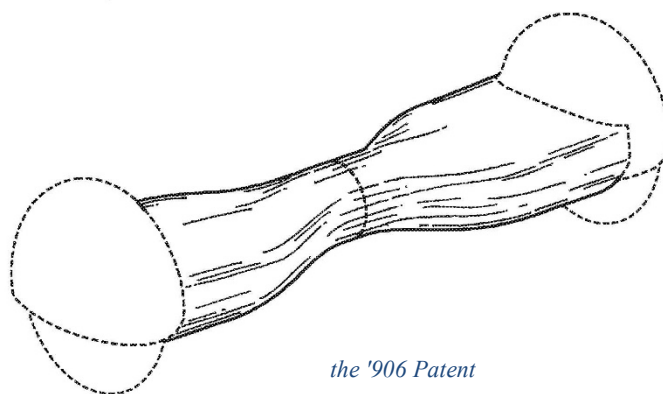
123. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '723 Patent and the fender design of the Accused Product C. Even to the most casual observer, the differences are significant.



Fender Comparison- '723 Patent/ Accused Product C

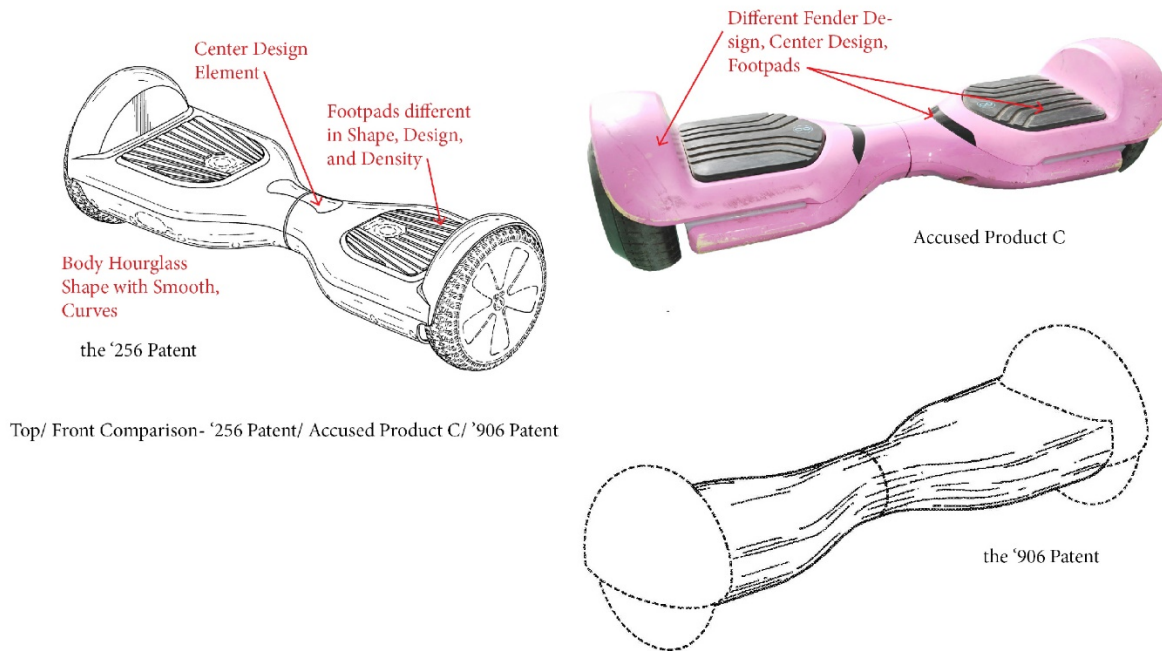


124. The overall shape of the '723 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

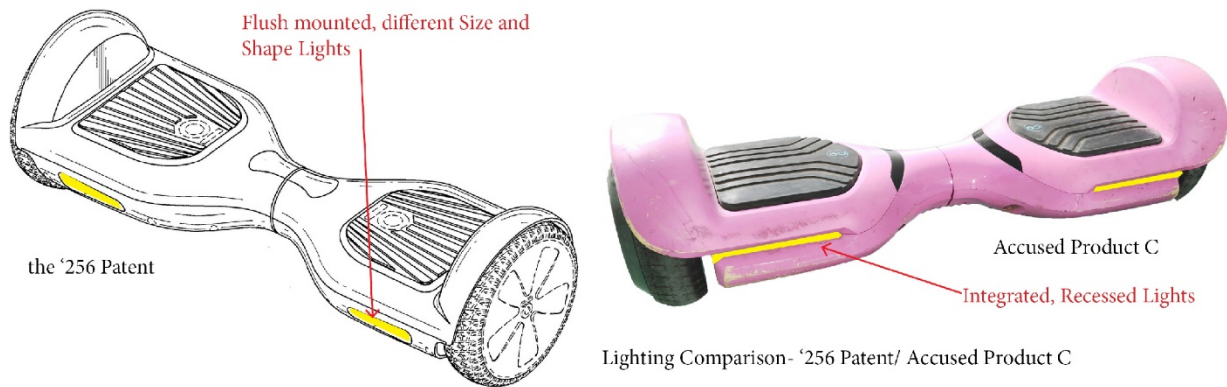


### **NON-INFRINGEMENT OF '256 PATENT BY ACCUSED PRODUCT C**

125. There are several key design difference between the design claim of the '256 Patent and the Accused Product C that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. The overall shape of Accused Product C is angular, with sharp edges- where the forms of the '256 Patent and the Prior art are much softer, smoother. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '256 claim has prominent design element in the middle and the Accused Product C is clean, without any such design element.



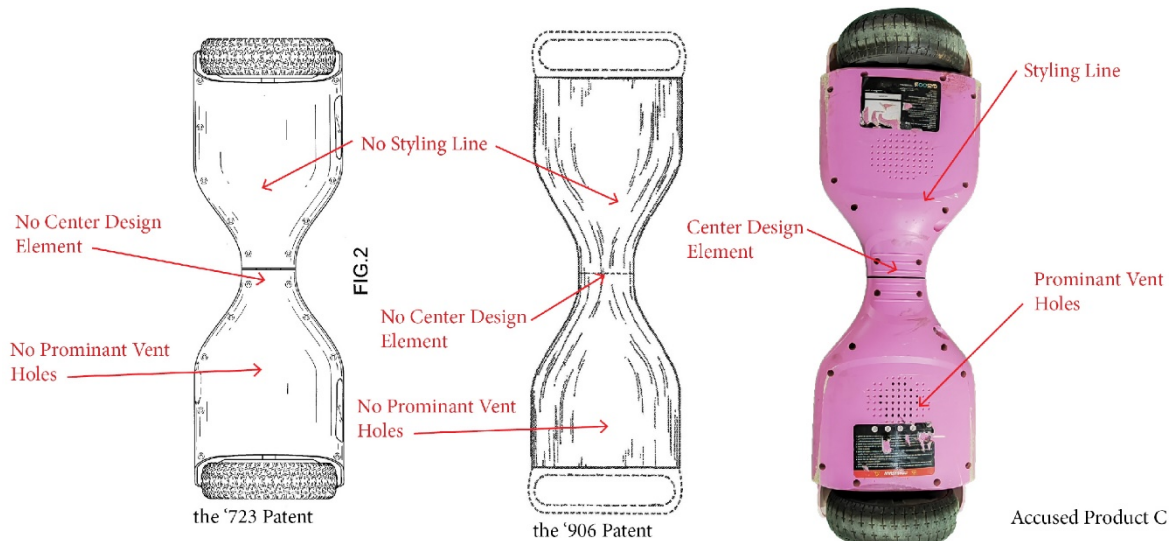
126. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer.



127. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and

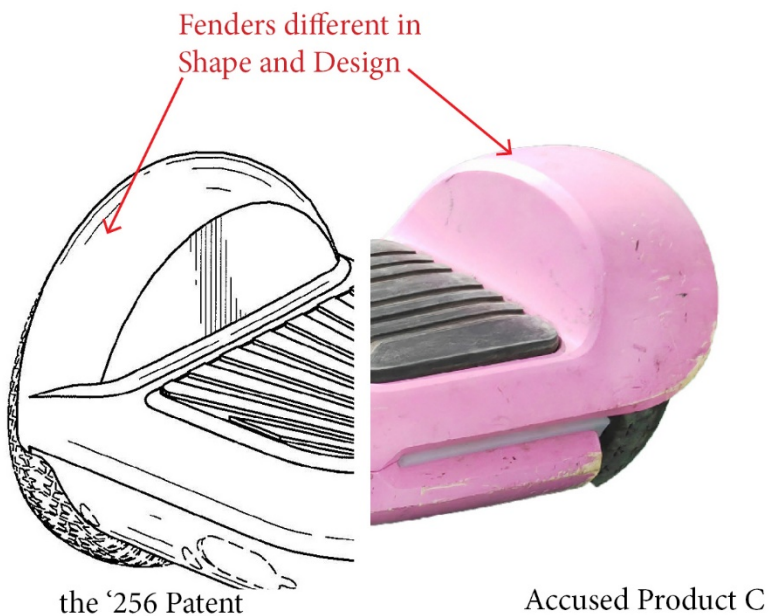
ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

128. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.



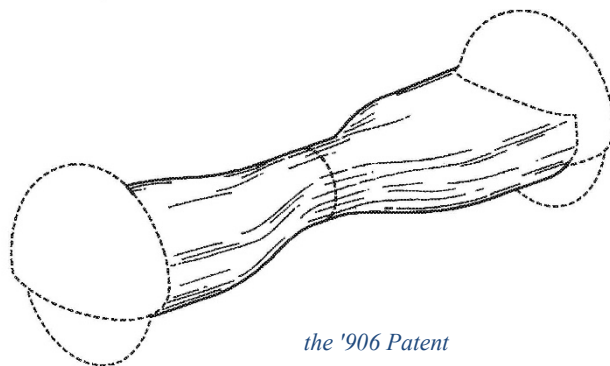
Undercarriage Comparison- '256 Patent/ Accused Product C/ '906 Patent

129. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '256 Patent and the fender design of the Accused Product C. Even to the most casual observer, the differences are significant.



Fender Comparison- '256 Patent/ Accused Product C

130. The overall shape of the '256 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate “shoulder width” dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the

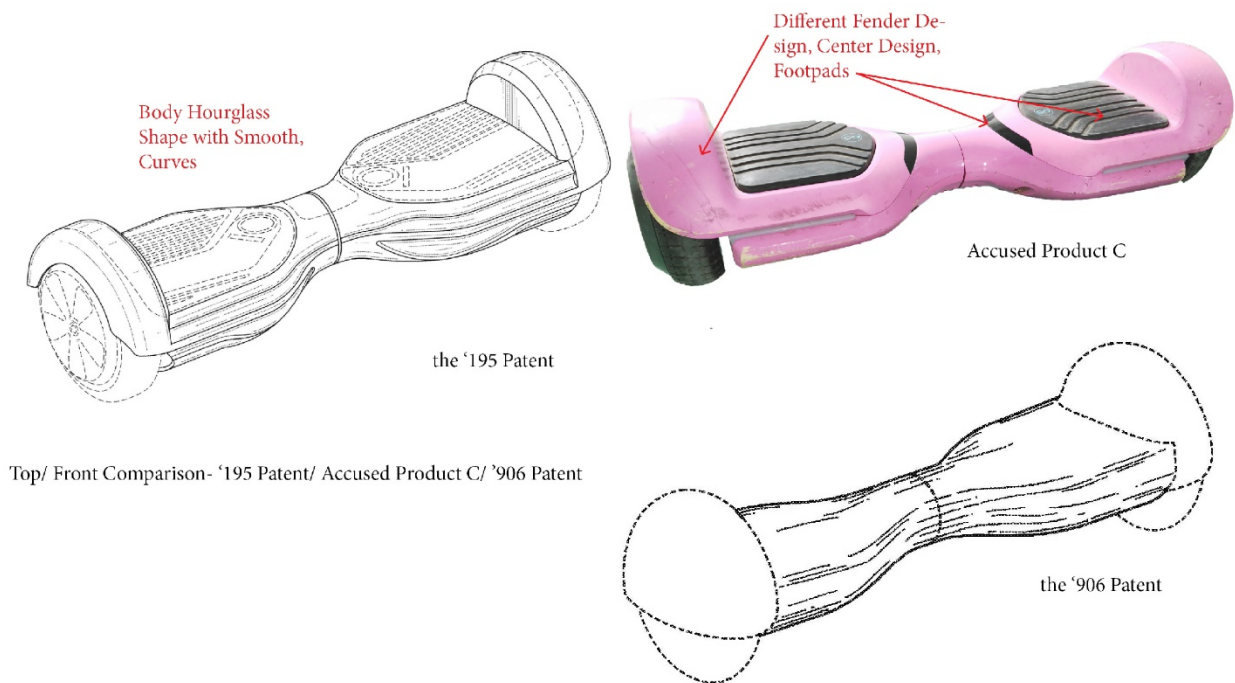


other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the

design of the footpads, fenders, etc, all the more important.

### **NON-INFRINGEMENT OF '195 PATENT BY ACCUSED PRODUCT C**

131. There are several key design difference between the design claim of the '195 Patent and the Accused Product that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and

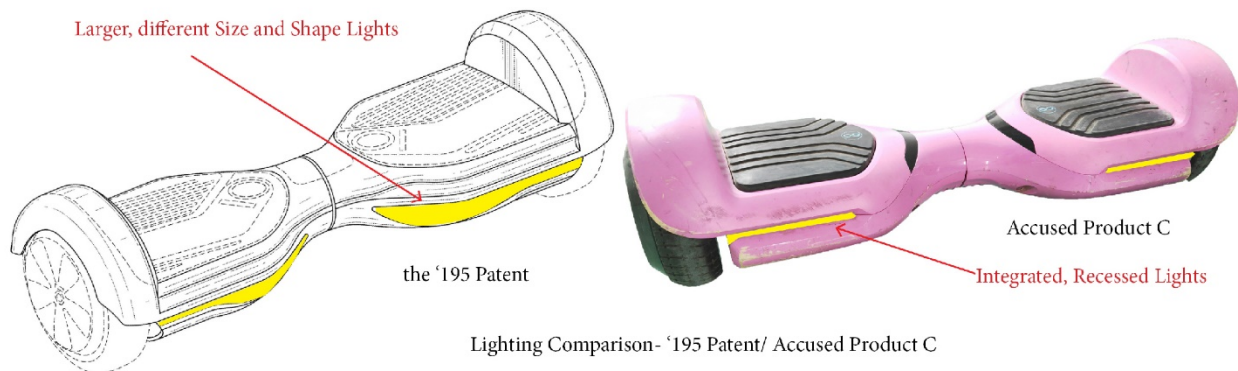


design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '195 claim has prominent design element in the middle and the Accused Product C is clean, without any such design element.

132. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer. The headlight design (which is mirrored on the back as well) as depicted in the '195 Patent is a very prominent design feature substantially

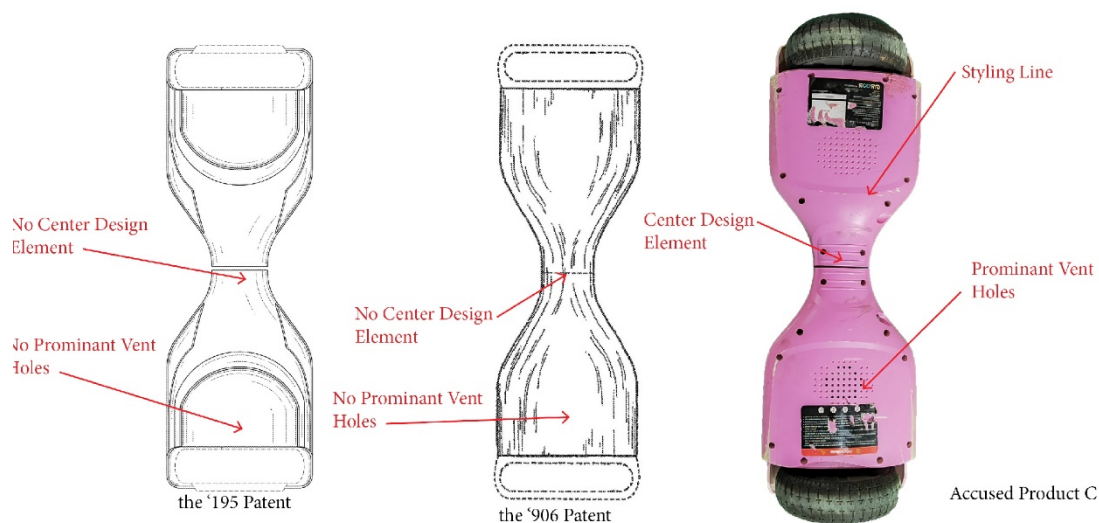


different from the light design of the Accused Product C.



133. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

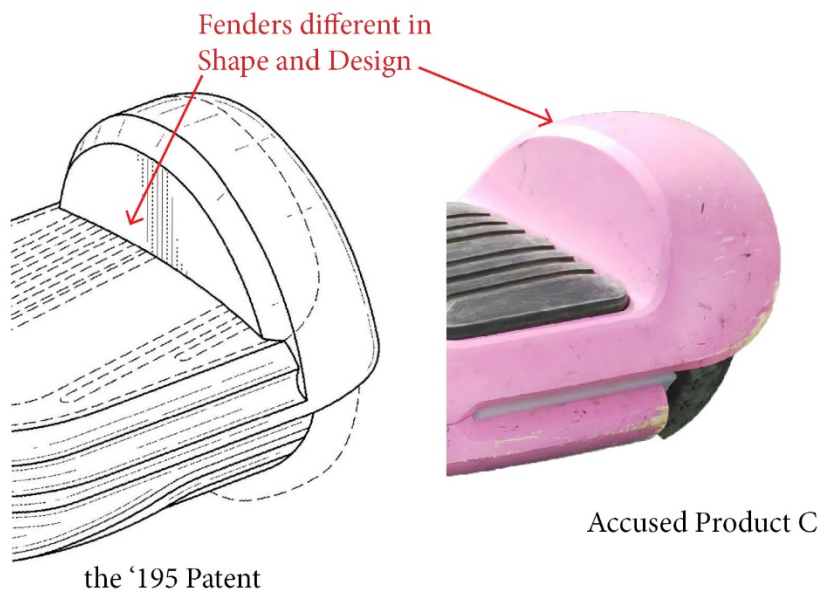
134. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.



135. Another important design feature that has a significant effect on the overall

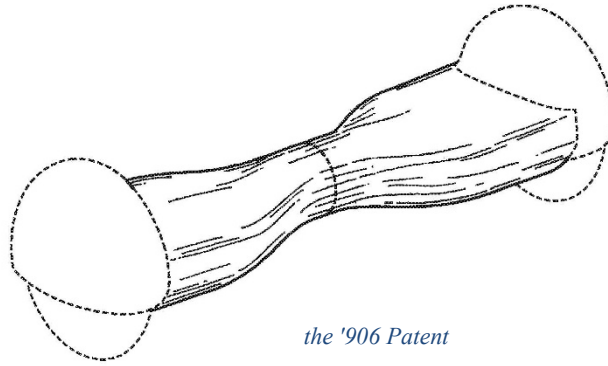


visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '195 Patent and the fender design of the Accused Product C. Even to the most casual observer, the differences are significant.



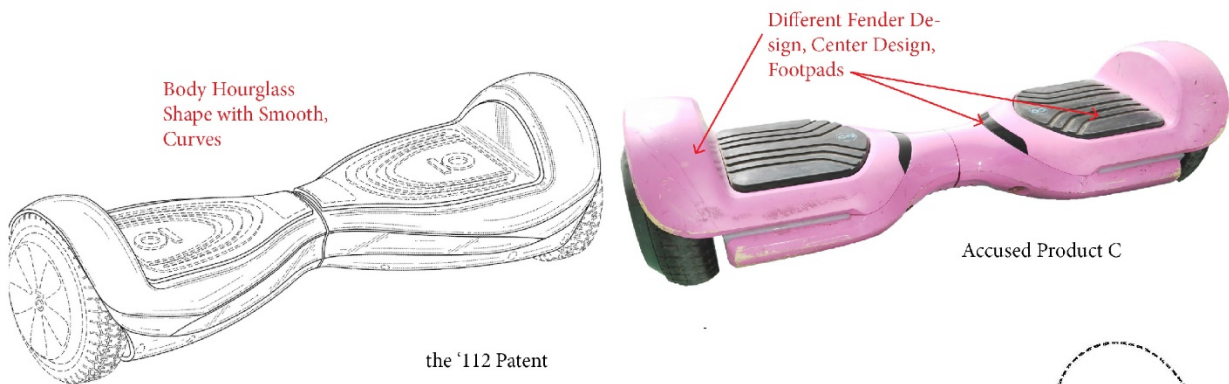
Fender Comparison- '195 Patent/ Accused Product C

136. The overall shape of the '195 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

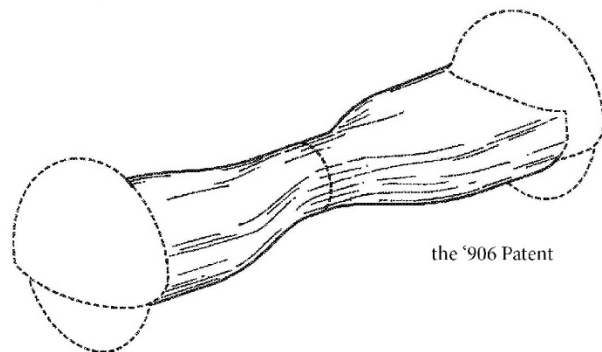


### **NON-INFRINGEMENT OF '112 PATENT BY ACCUSED PRODUCT C**

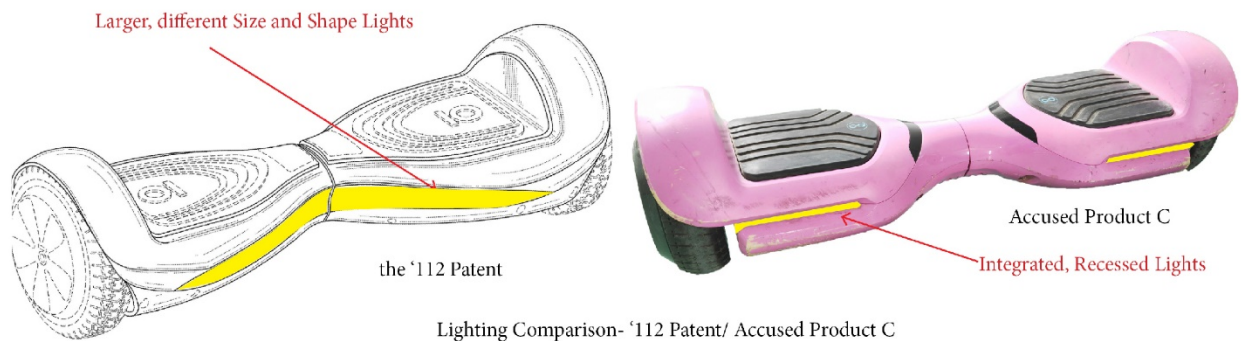
137. There are several key design difference between the design claim of the '112 Patent and the Accused Product that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '112 claim has prominent design element in the middle and the Accused Product is clean, without any such design element.



Top/ Front Comparison- '112 Patent/ Accused Product C/ '906 Patent

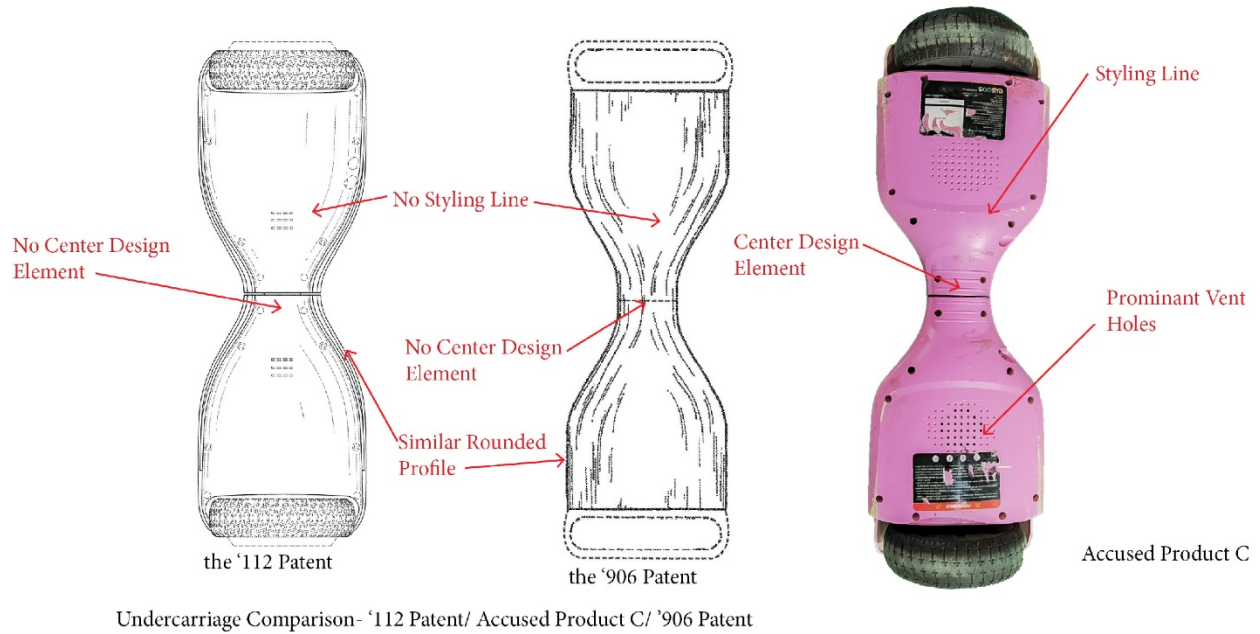


138. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer. The headlight design (which is mirrored on the back as well) as depicted in the '112 Patent is a very prominent design feature and in no way would ever be confused with the light design of the Accused Product.

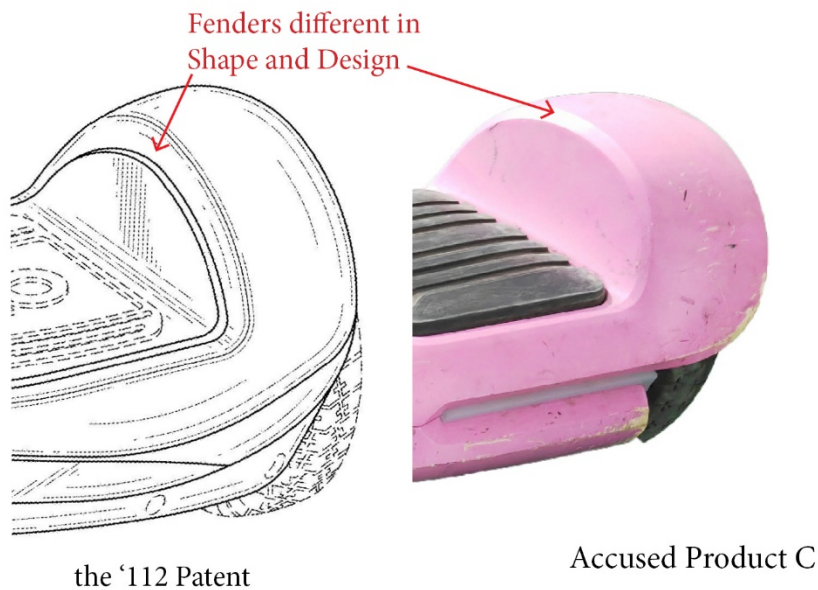


139. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

140. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.

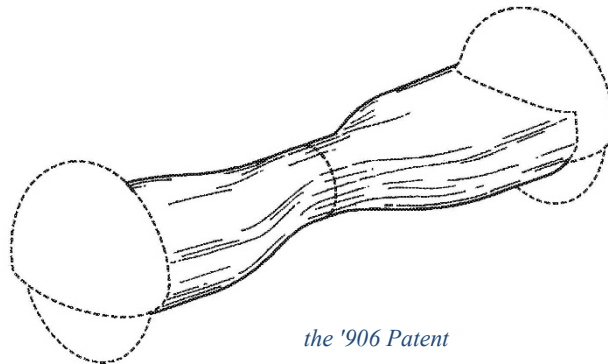


141. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '112 Patent and the fender design of the Accused Product. Even to the most casual observer, the differences are significant.



Fender Comparison- '112Patent/ Accused Product C

142. The overall shape of the '112 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the



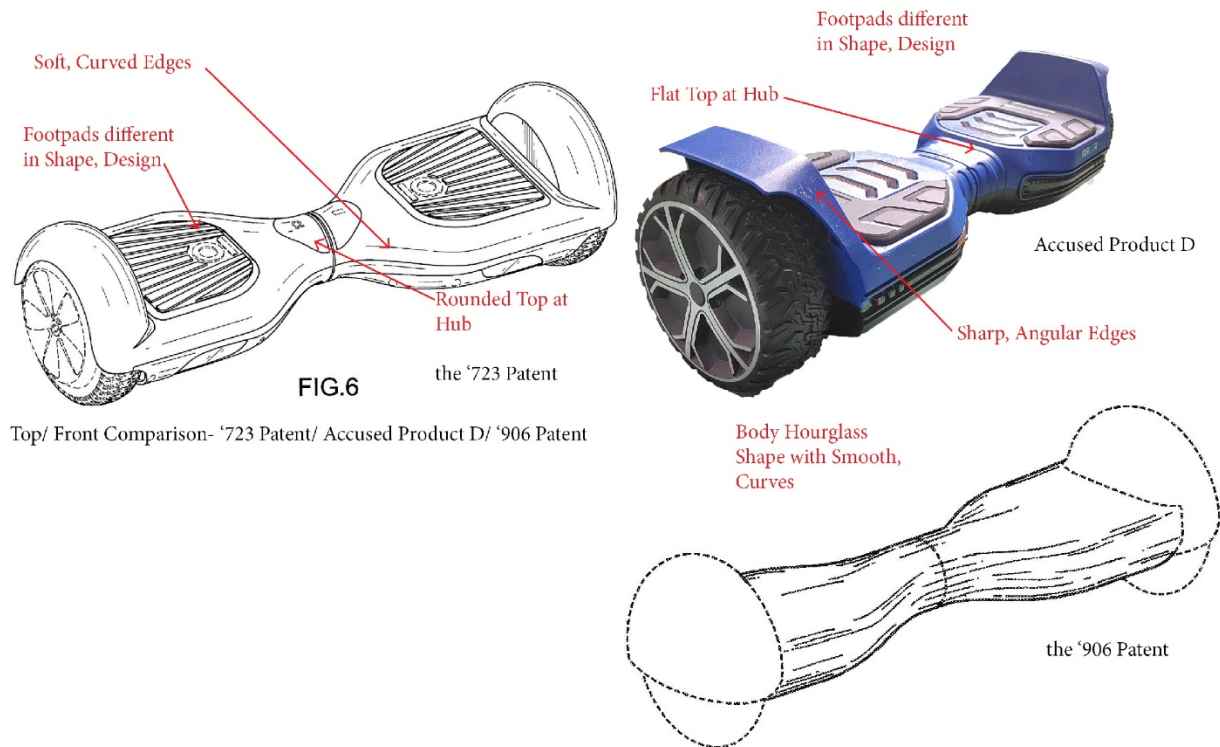
other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

#### **NON-INFRINGEMENT OF '723 PATENT BY ACCUSED PRODUCT D**

143. I have been informed that the test for infringement requires a side-by-side comparison of the claims of the patent as represented in the figures (usually drawings or photographs) with the Accused Device (often in photographs). Using well-established Gestalt principles, I then compared the differences/similarities between the '723 Patent and Accused Product D through the eyes of "the hypothetical ordinary observer who is conversant with the prior art," as discussed in *Egyptian Goddess*.



144. To further confirm the results of my analysis, I also compared views of the '723 Patent with corresponding views (as available) of Accused Product D and the closest Alleged Prior Art Design (I chose the '906 Patent) in order to determine how the similarities and differences between the overall Gestalt as represented in these two designs would contribute to their overall effect. It is my opinion that an ordinary observer would find Accused Products D's overall appearance to be substantially different from the '723 and the '906 designs (which would appear substantially similar to the Ordinary Observer).

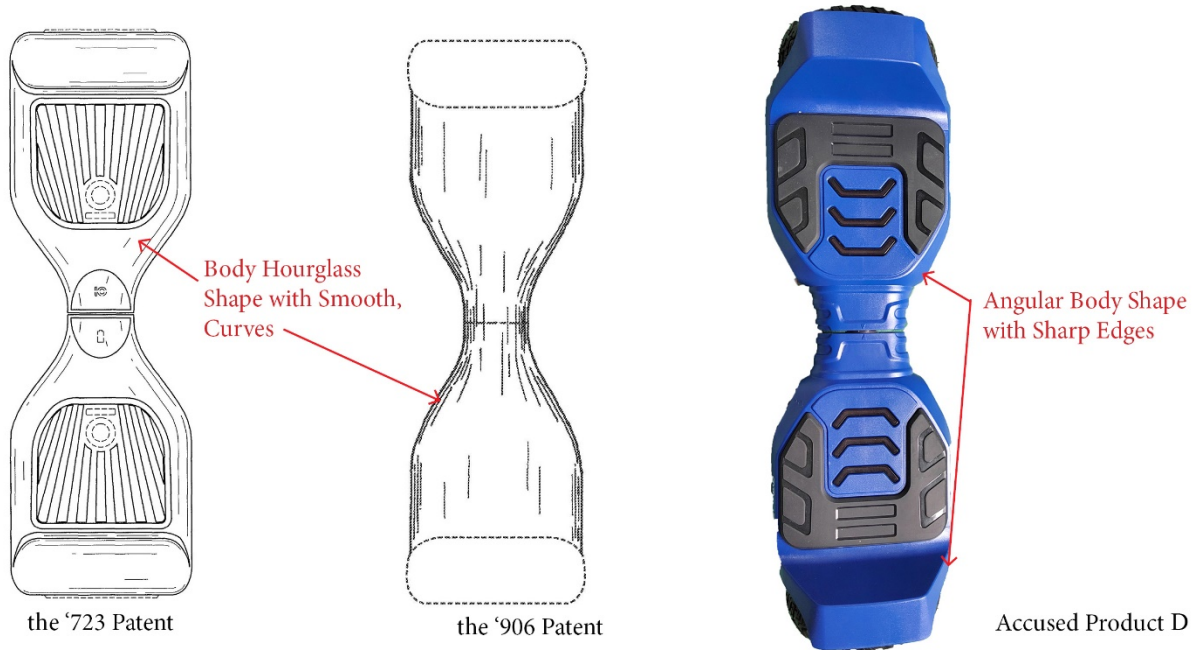


145. Through this process, I determined that the overall Gestalt of the Accused Product D is substantially different from the designs of the prior art '906 Patent and that of the '723 Patent, and that the '723 Patent would appear more similar to the prior art '906 Patent than Accused Product D.

146. There are several key design difference between the design claim of the '723 Patent and the Accused Product D that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and



design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '723 claim has prominent elliptical design element in the middle and the Accused Product D is completely different, without any elliptical design element.



Top Comparison- '723 Patent/ Accused Product D/ '906 Patent

147. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer.

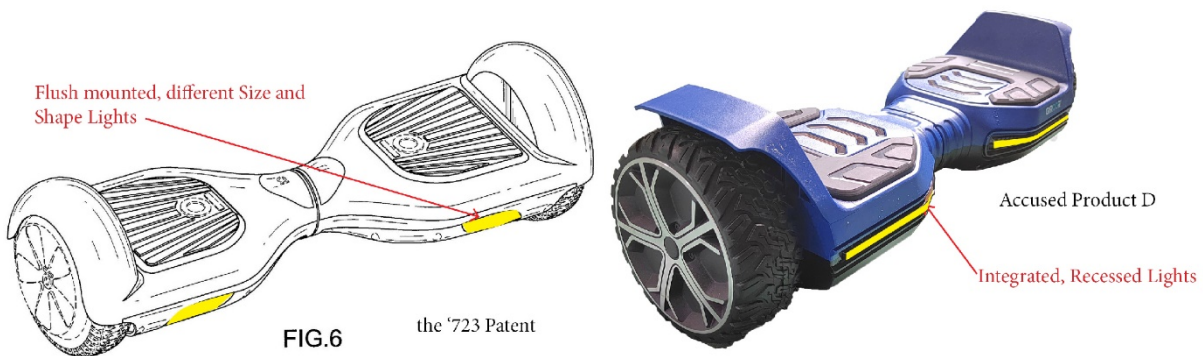
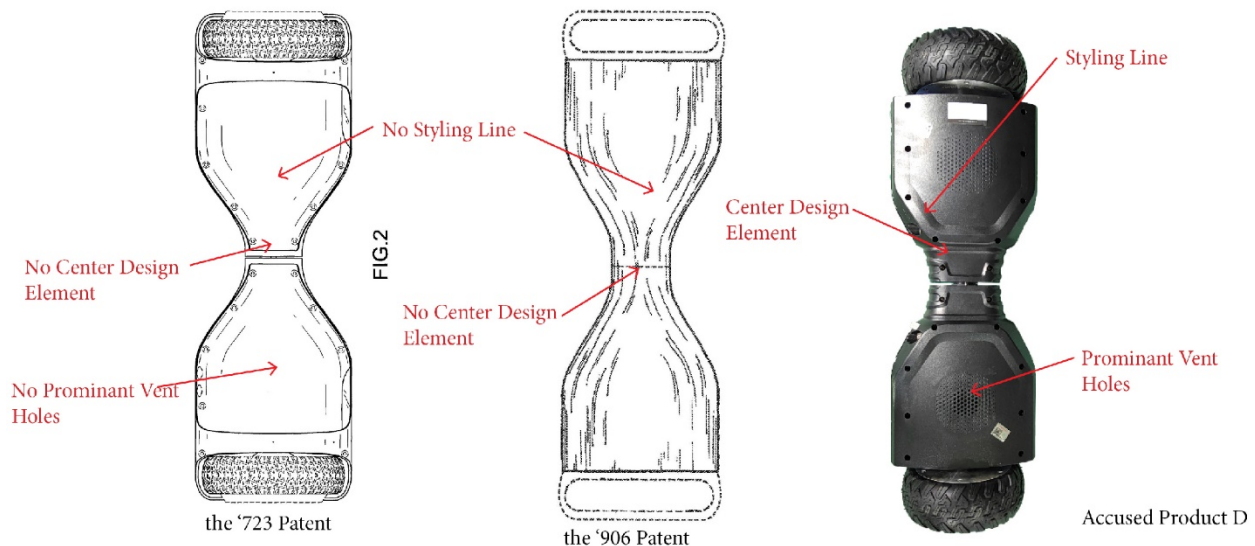


FIG.6  
Light Design Comparison- '723 Patent/ Accused Product D

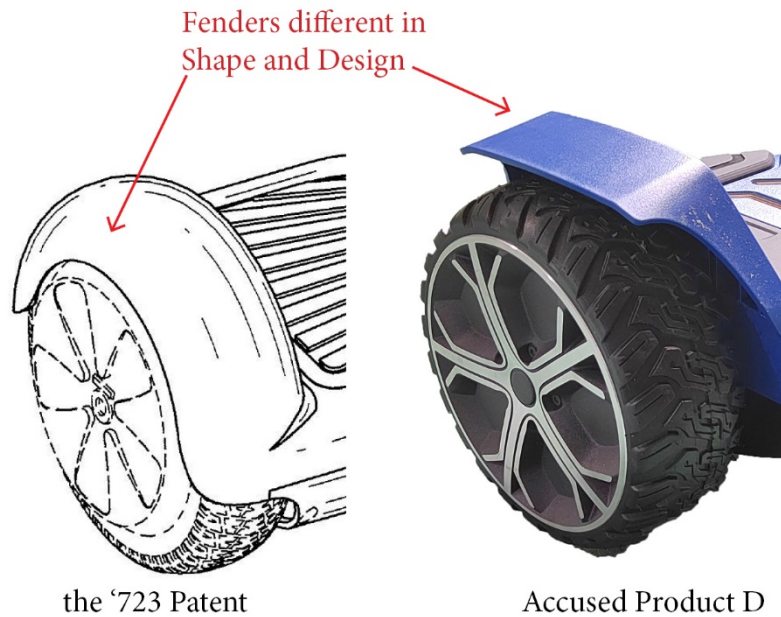
148. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

149. A bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.



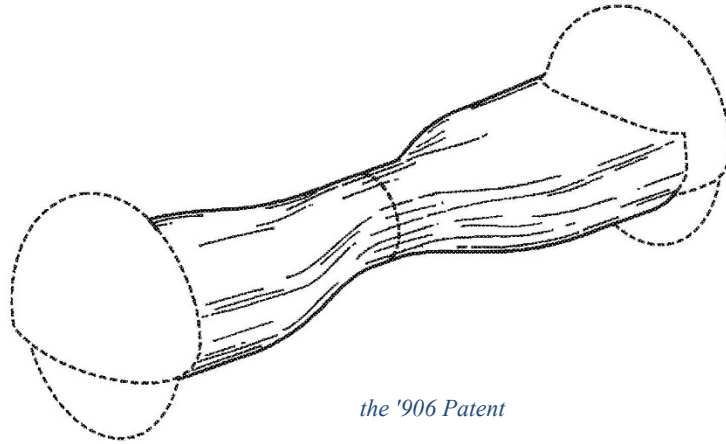
Undercarriage Comparison- '723 Patent/'906 Patent/ Accused Product D

150. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '723 Patent and the fender design of the Accused Product D. Even to the most casual observer, the differences are significant.



Fender Comparison- '723 Patent/ Accused Product D

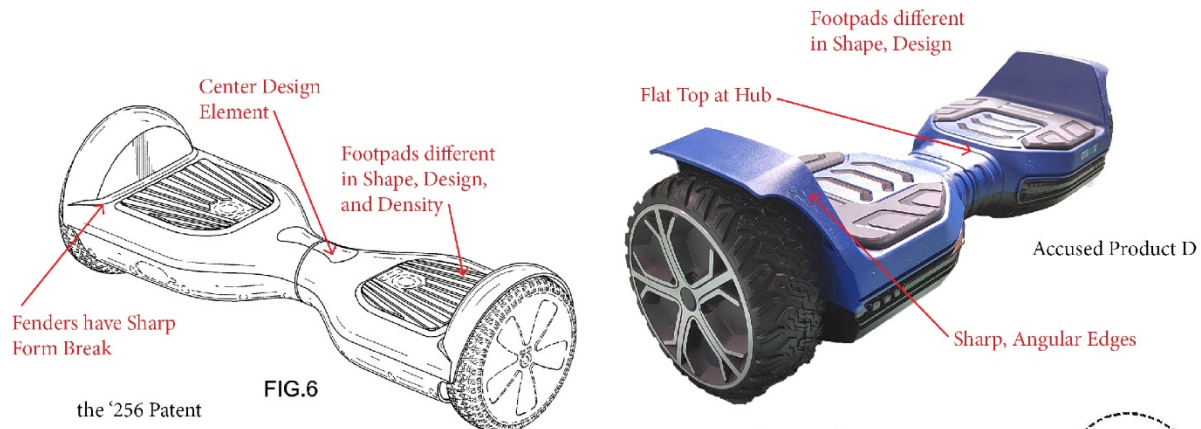
151. The overall shape of the '723 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.



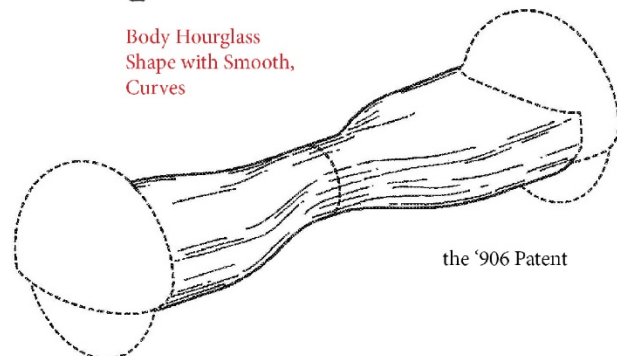
*the '906 Patent*

### **NON-INFRINGEMENT OF '256 PATENT BY ACCUSED PRODUCT D**

152. There are several key design difference between the design claim of the '256 Patent and the Accused Product D that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. The overall shape of Accused Product B is angular, with sharp edges- where the forms of the '256 Patent and the Prior art are much softer, smoother. Also, an ordinary observer familiar with the prior art and other



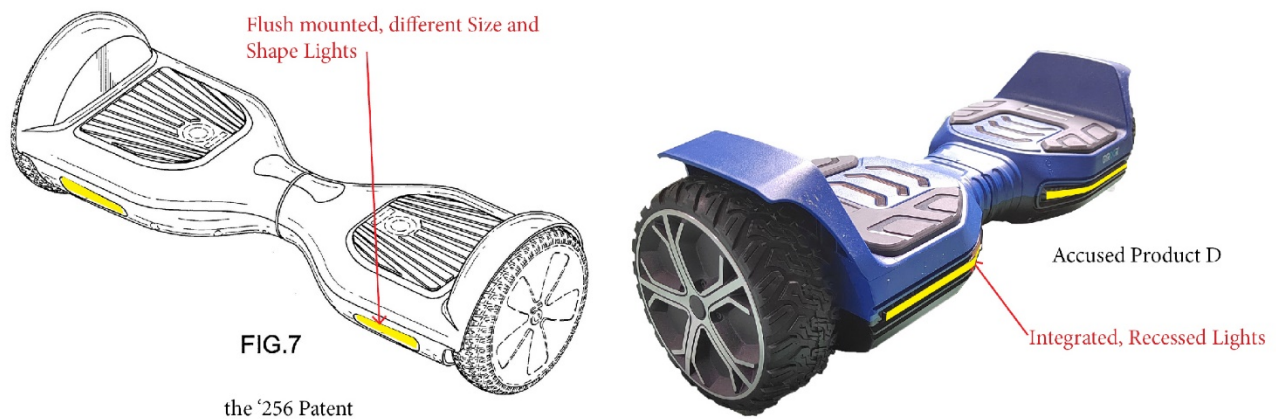
Top/ Front Comparison- '256 Patent/ Accused Product D/ '906 Patent



*the '906 Patent*

products in the marketplace would recognize that the '256 claim has prominent design element in the middle and the Accused Product D is clean, without any such design element.

153. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer.

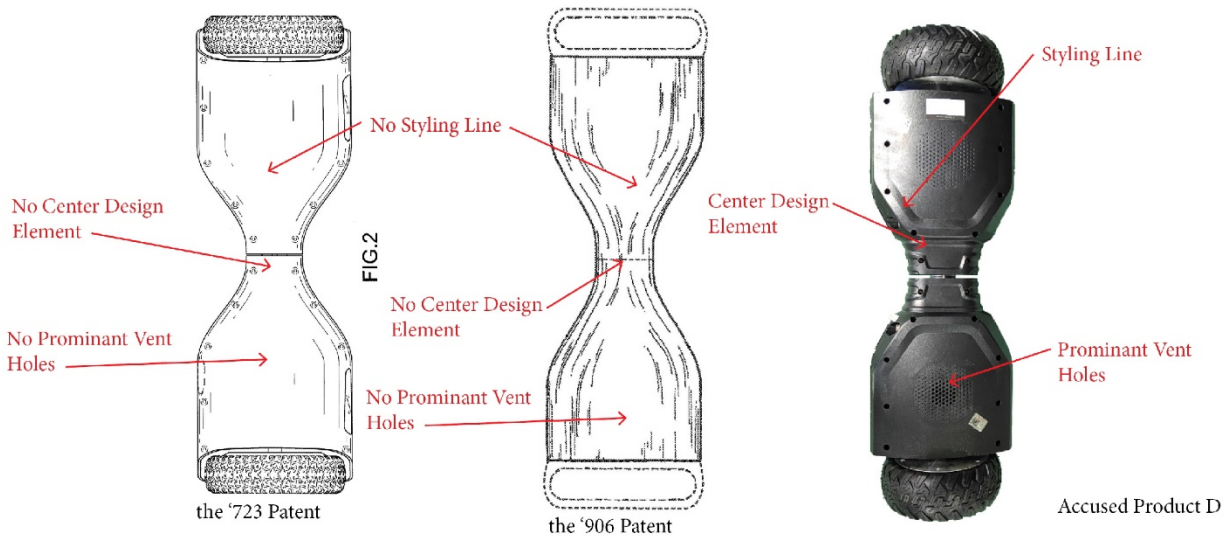


Lighting Comparison- '256 Patent/ Accused Product D

154. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

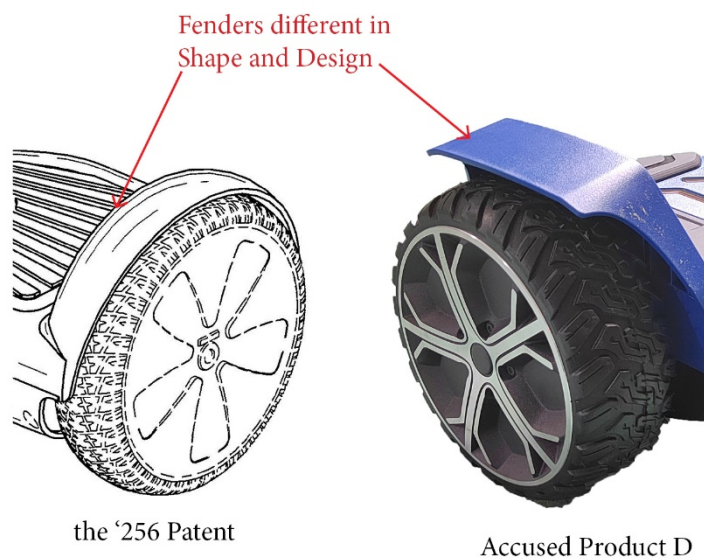
155. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.





Undercarriage Comparison- '256 Patent/ Accused Product/ '906 Patent

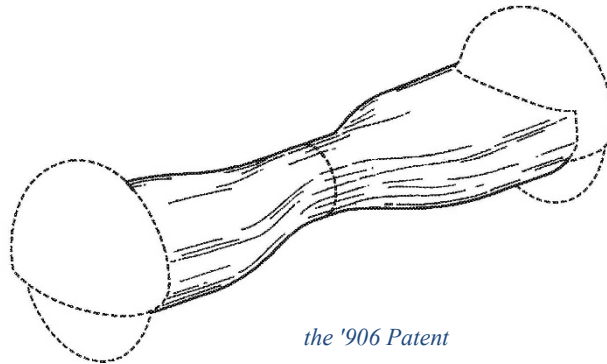
156. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '256 Patent and the fender design of the Accused Product D. Even to the most casual observer, the differences are significant.



Fender Comparison- '256 Patent/ Accused Product D



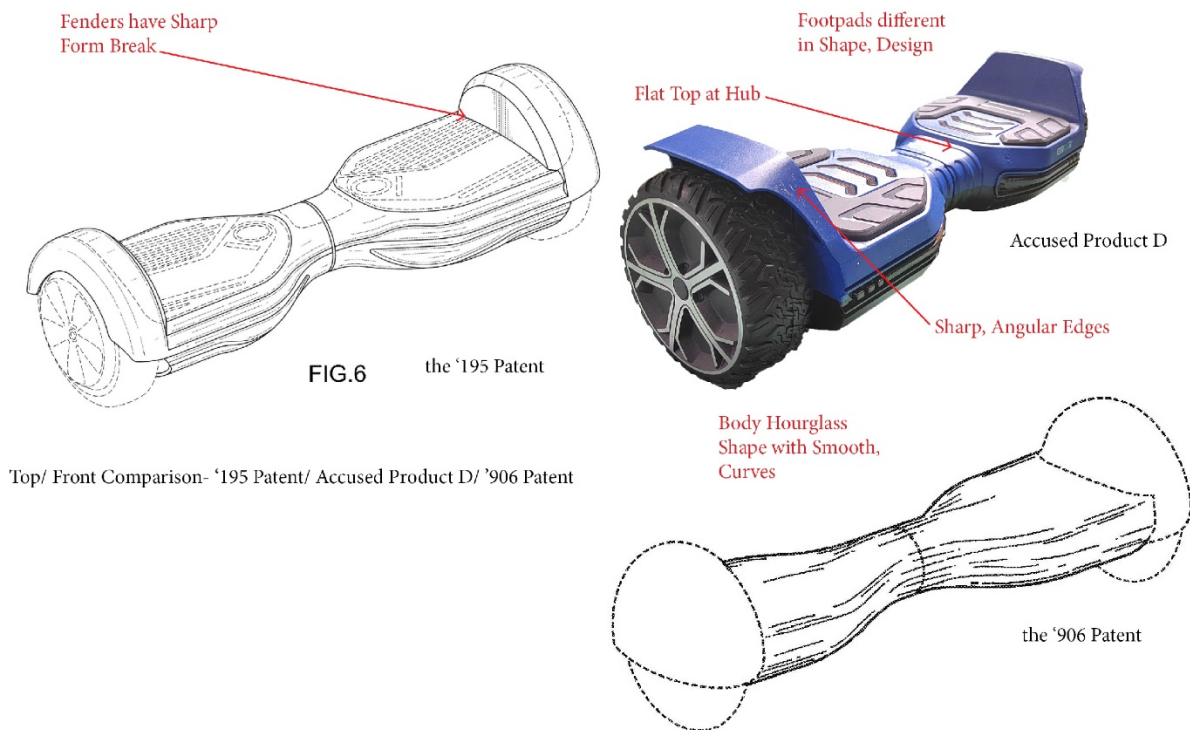
157. The overall shape of the '256 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the



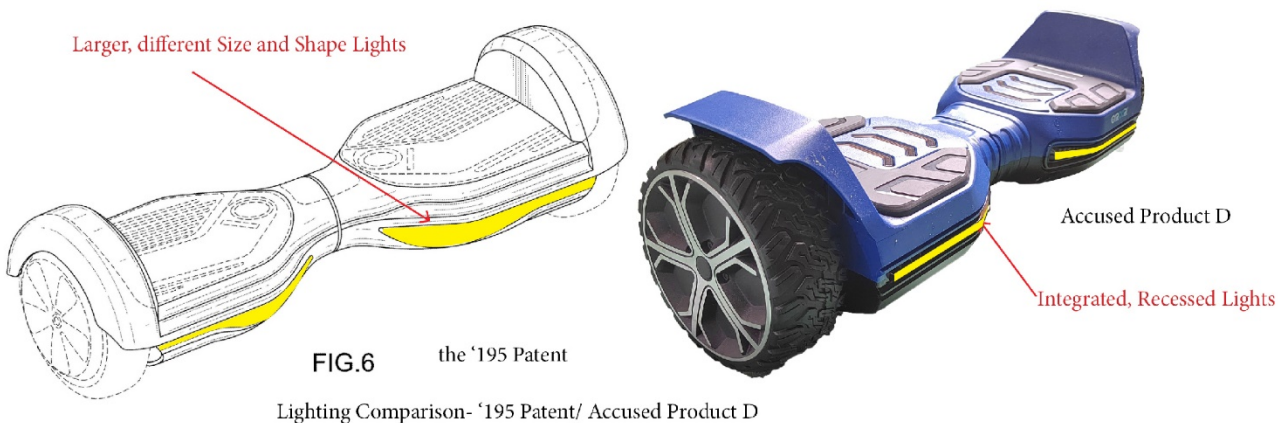
other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

#### **NON-INFRINGEMENT OF '195 PATENT BY ACCUSED PRODUCT D**

158. There are several key design difference between the design claim of the '195 Patent and the Accused Product that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '195 claim has prominent design element in the middle and the Accused Product D is clean, without any such design element.



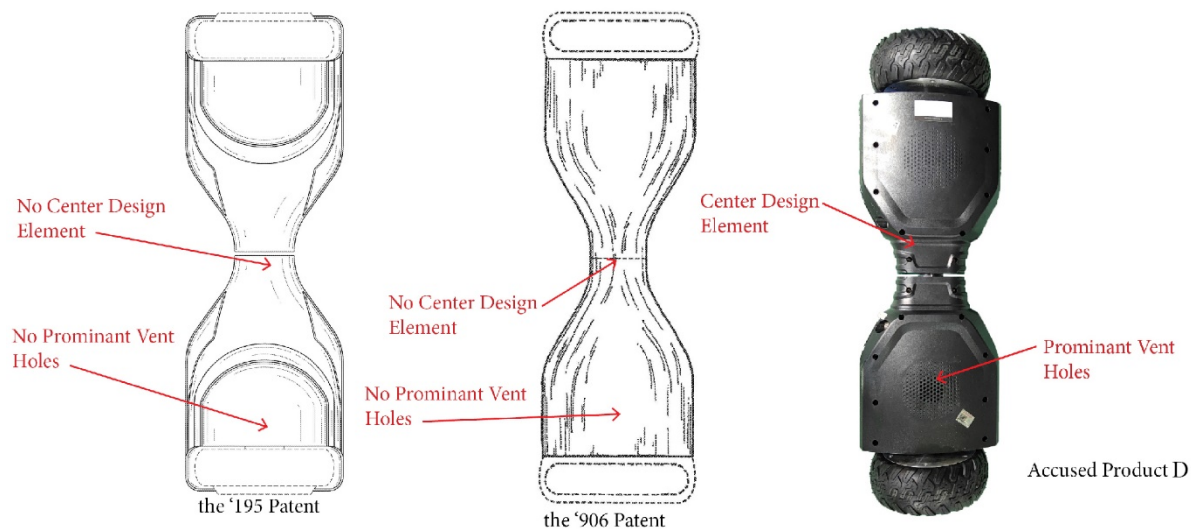
159. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer. The headlight design (which is mirrored on the back as well) as depicted in the '195 Patent is a very prominent design feature substantially different from the light design of the Accused Product D.



160. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and

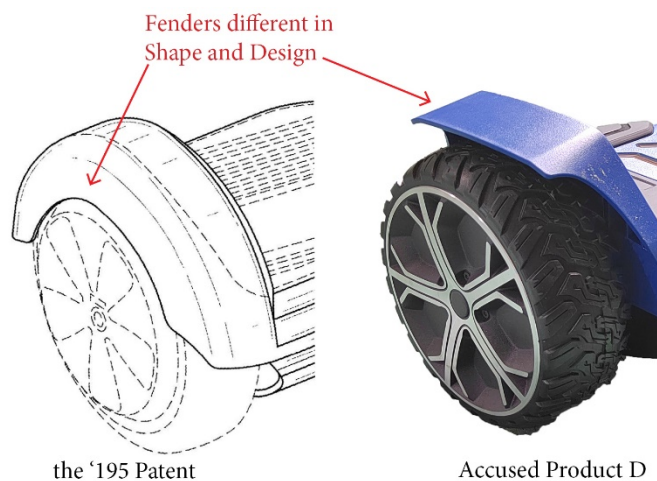
ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

161. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.



Undercarriage Comparison- '195 Patent/ Accused Product/ '906 Patent

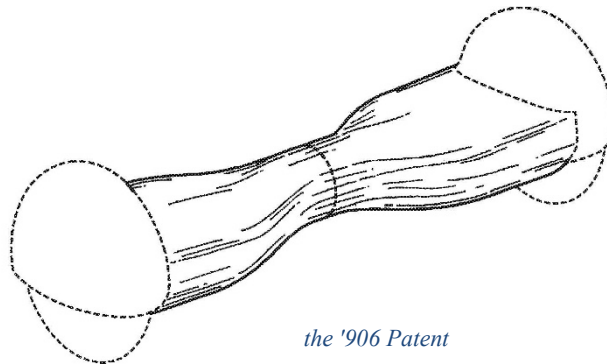
162. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here



Fender Comparison- '195 Patent/ Accused Product D

we can see a comparison of the fender design claimed in the '195 Patent and the fender design of the Accused Product D. Even to the most casual observer, the differences are significant.

163. The overall shape of the '195 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate "shoulder width" dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the

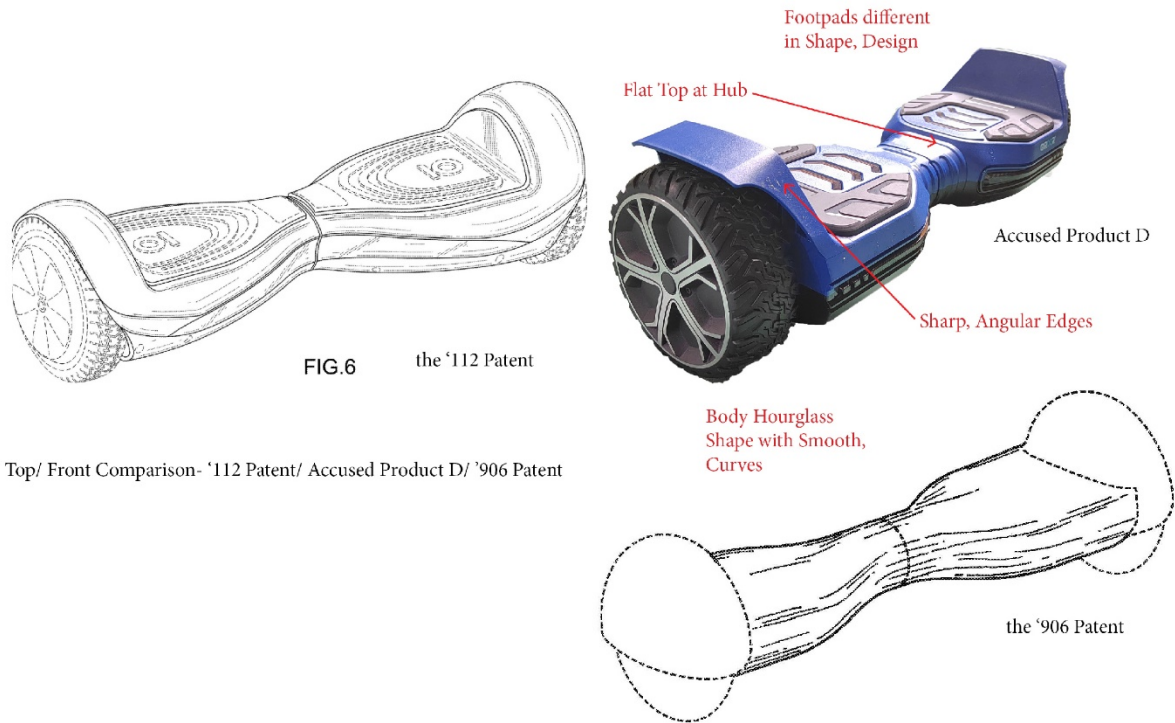


other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

#### **NON-INFRINGEMENT OF '112 PATENT BY ACCUSED PRODUCT D**

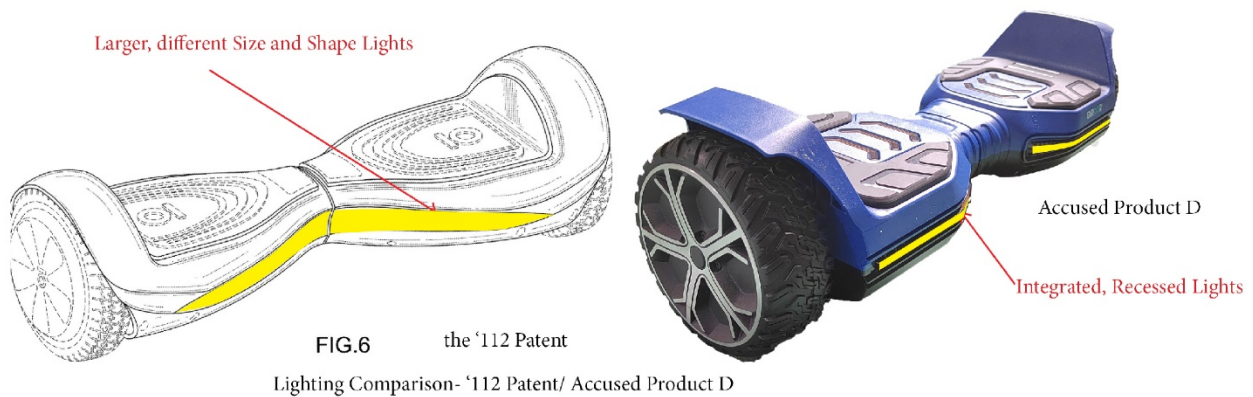
164. There are several key design difference between the design claim of the '112 Patent and the Accused Product D that would be immediately recognized by the ordinary observer. From the Top and Front views, the differences in the shape and design of the footpads is clear. Also, an ordinary observer familiar with the prior art and other products in the marketplace would recognize that the '112 claim has

rounded fenders and the Accused Product D is narrower and more angled.



Top/ Front Comparison- '112 Patent/ Accused Product D/ '906 Patent

165. The front view we can see dramatic and obvious difference in the size, shape, and character of the lights. In my opinion, this difference would not be unnoticed by the ordinary observer. The headlight design (which is mirrored on the back as well) as depicted in the '112 Patent is a very prominent design feature and in no way would ever be confused with the light design of the Accused Product D.

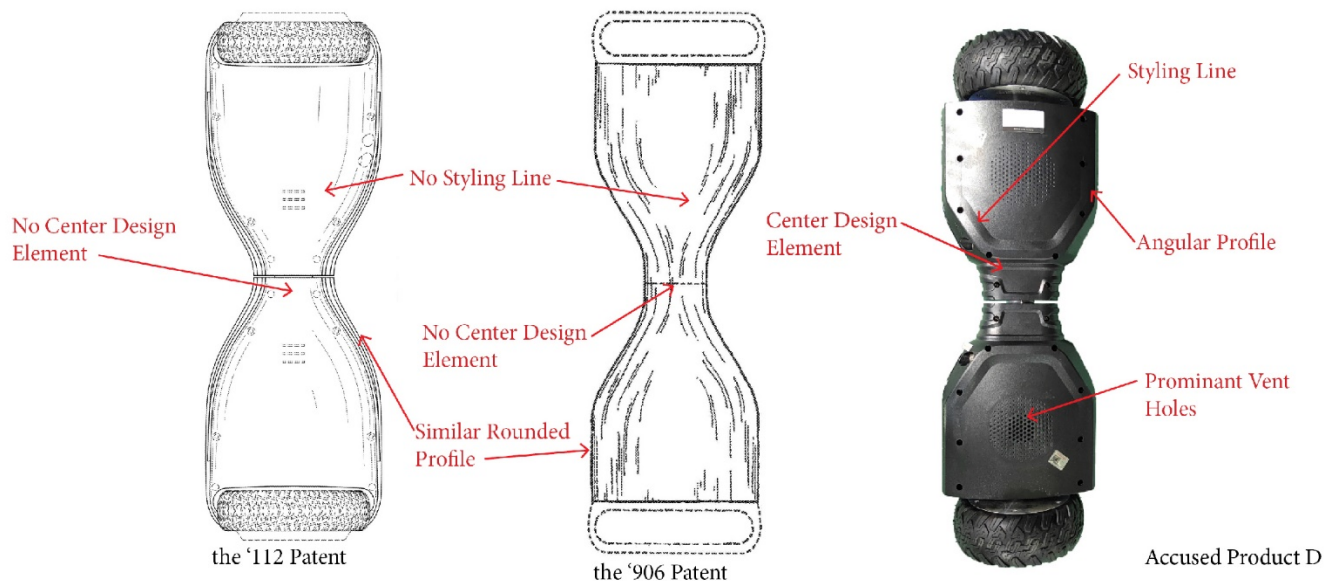


166. Although I consider the Top and Front views to be the most important in my analysis, simply because these are the views most seen and understood by and



ordinary observer when comparing the products at the point of sale (online or in brick-and-mortar retail environments), the bottom and back views also play a role in an ordinary observer's understanding the overall visual appearance of the designs.

167. The bottom view reveals substantial design differences. There is a prominent central design detail at the center, two strong styling recess areas under the feet, and vent hole patterns that are readily noticed because of the Figure-Ground gestalt, as well as Closure, Similarity, and Proximity.

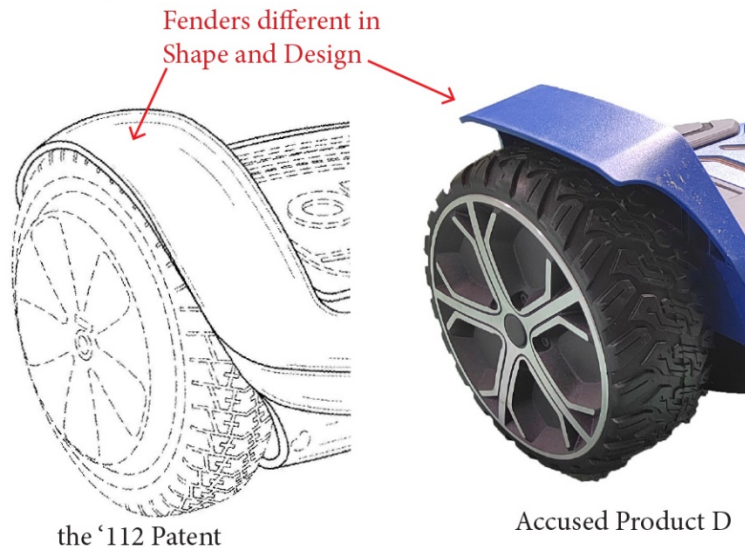


Undercarriage Comparison- '112 Patent/ Accused Product D/ '906 Patent

168. Another important design feature that has a significant effect on the overall visual impression of the ordinary observer is the size and shape of the fenders. Here we can see a comparison of the fender design claimed in the '112 Patent and the fender design of the Accused Product D. Even to the most casual observer, the differences are significant.

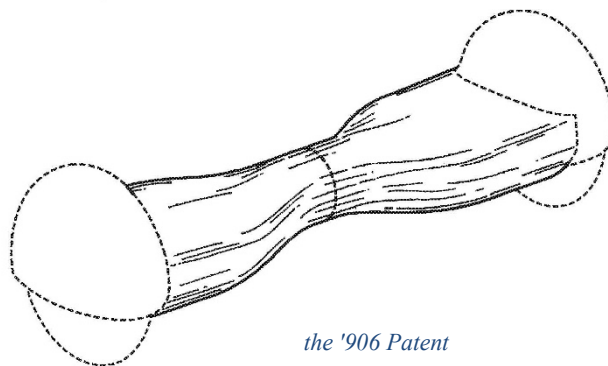


Fender Comparison- '256 Patent/ Accused Product D



Fender Comparison- '112 Patent/ Accused Product D

169. The overall shape of the '112 Patent claim is, as I explained earlier, largely based on functionality. The dimensions correspond to the dimensions of a human foot, the distance between footpads corresponds to approximate “shoulder width” dimensions of the user, the narrowing at the center facilitates the needed twisting motion without interference with the user or the ground. The prior art US D739,906 patent below was not listed on the face of the patent, but was listed on two of the



other Patents-in-Suit. It claims a design with the narrowing center and broadening under the feet (the hourglass shape), which makes other design features such as the design of the footpads, fenders, etc, all the more important.

## **CONCLUSION**

170. Based upon my experience as a designer and design educator, my application of the Gestalt Principles of Visual Perception, my understanding of the legal principles, my analysis of the Patents-in-Suit and the relevant prior art, my review of the '857 Patent, the Prior Art '906 Patent, and my review of photographs of the Accused Product, it is my opinion that an ordinary observer familiar with the prior art would not find the Accused Products to be substantially similar to the claimed designs of the Patents-in Suit.

171. In my opinion, the visual differences between the claimed design of the '723 Patent and the design of the Accused Product A would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '723 Patent. The substantially dissimilar foot pads, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

172. In my opinion, the visual differences between the claimed design of the '256 Patent and the design of the Accused Product A would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '256 Patent. The substantially dissimilar foot pads, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

173. In my opinion, the visual differences between the claimed design of the '195 Patent and the design of the Accused Product A would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '195 Patent. The substantially dissimilar foot pad shape and placement, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

174. In my opinion, the visual differences between the claimed design of the '112 Patent and the design of the Accused Product A would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '112 Patent. The substantially dissimilar foot pad shape and placement, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

175. In my opinion, the visual differences between the claimed design of the '723 Patent and the design of the Accused Product B would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '723 Patent. The substantially dissimilar foot pads, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

176. In my opinion, the visual differences between the claimed design of the '256 Patent and the design of the Accused Product B would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '256 Patent. The substantially dissimilar foot pads, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual

impression to the ordinary observer.

177. In my opinion, the visual differences between the claimed design of the '195 Patent and the design of the Accused Product B would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '195 Patent. The substantially dissimilar foot pad shape and placement, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

178. In my opinion, the visual differences between the claimed design of the '112 Patent and the design of the Accused Product B would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '112 Patent. The substantially dissimilar foot pad shape and placement, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

179. In my opinion, the visual differences between the claimed design of the '723 Patent and the design of the Accused Product C would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '723 Patent. The substantially dissimilar foot pads, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

180. In my opinion, the visual differences between the claimed design of the '256 Patent and the design of the Accused Product C would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '256 Patent. The substantially dissimilar foot pads, lighting design, the design of the undercarriage and the

dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

181. In my opinion, the visual differences between the claimed design of the '195 Patent and the design of the Accused Product C would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '195 Patent. The substantially dissimilar foot pad shape and placement, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

182. In my opinion, the visual differences between the claimed design of the '112 Patent and the design of the Accused Product C would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '112 Patent. The substantially dissimilar foot pad shape and placement, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

183. In my opinion, the visual differences between the claimed design of the '723 Patent and the design of the Accused Product D would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '723 Patent. The substantially dissimilar foot pads, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

184. In my opinion, the visual differences between the claimed design of the '256 Patent and the design of the Accused Product D would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '256 Patent. The substantially

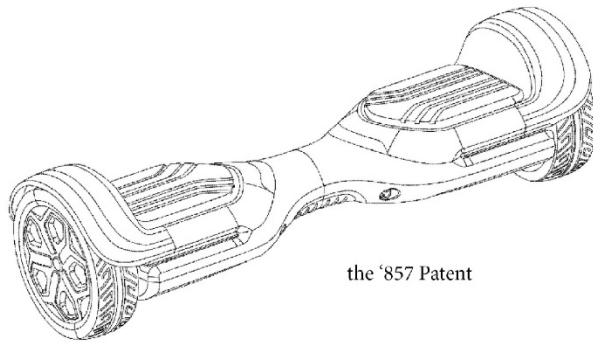
dissimilar foot pads, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

185. In my opinion, the visual differences between the claimed design of the '195 Patent and the design of the Accused Product D would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '195 Patent. The substantially dissimilar foot pad shape and placement, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

186. In my opinion, the visual differences between the claimed design of the '112 Patent and the design of the Accused Product D would be obvious to the ordinary observer. Each element of the ornamental feature, viewed together, only enhances the dissimilarity between the Accused Product and the '112 Patent. The substantially dissimilar foot pad shape and placement, lighting design, the design of the undercarriage and the dramatically different fender design creates a substantially different overall visual impression to the ordinary observer.

187. The D808,857 Patent ("the '857 Patent") is titled "Hoverboard" and has a filing date of Jan 30, 2018— a copy is attached as Exhibit 7. Broken lines set forth the bounds of the claimed design and form no part thereof. Although this patent was not a part of my non-infringement analysis, I do believe that Accused Product A and Accused Product C would both be seen as substantially similar to the '857 Patent in the eyes of an ordinary observer.





the '857 Patent



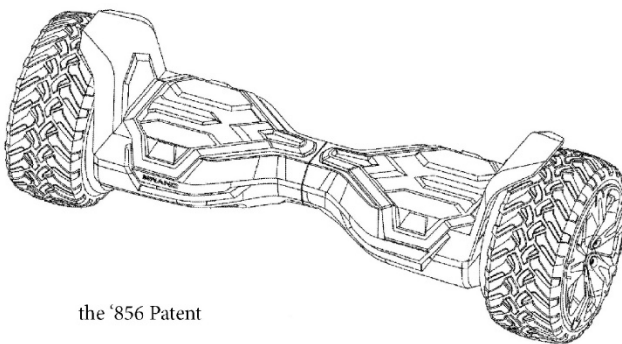
Accused Product A

Design Comparison- '857 Patent/ Accused Product A & C



Accused Product C

188. The D808,856 Patent (“the’856 Patent”) is titled “Hoverboard” and has a filing date of Jan 10, 2017– a highlighted copy is attached as Exhibit 9. Broken lines set forth the bounds of the claimed design and form no part thereof. Although this patent was not a part of my non-infringement analysis, I do believe that Accused Product B would be seen as substantially similar to the ‘856 Patent in the eyes of an ordinary observer.



the '856 Patent

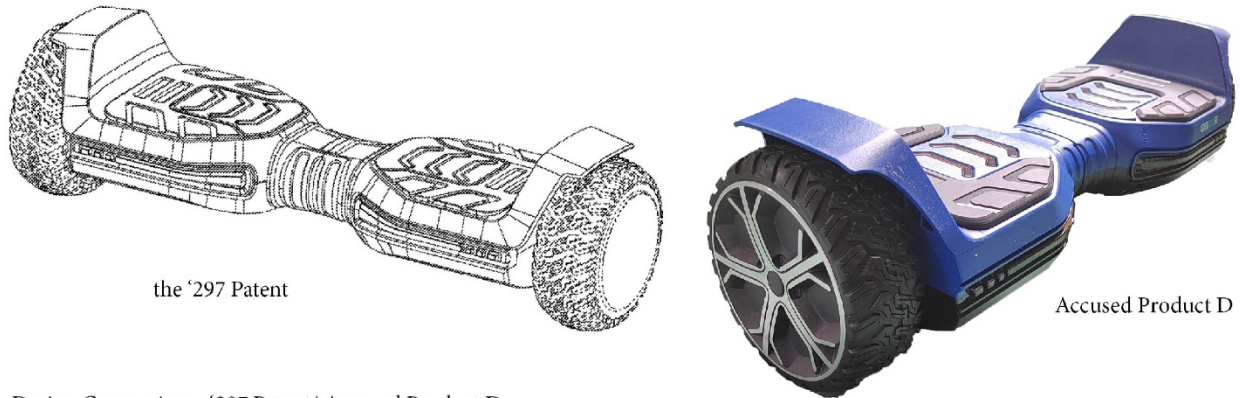


Accused Product B

Design Comparison- '856 Patent/ Accused Product B

189. The D891,297 Patent (“the’297 Patent”) is titled “Hoverboard” and has a filing date of March 6, 2019– a copy is attached as Exhibit 10. Broken lines set forth

the bounds of the claimed design and form no part thereof. Although this patent was not a part of my non-infringement analysis, I do believe that Accused Product D would be seen as substantially similar to the '297 Patent in the eyes of an ordinary observer.



I declare under penalty of perjury that the foregoing is true and correct.

Dated: 03 September 2021

A handwritten signature in black ink, appearing to read 'Lance Rake', is positioned above a horizontal line.

Lance Rake  
Lawrence, Kansas

# EXHIBIT 1

**LANCE RAKE**

PROFESSOR DESIGN  
785 424 3117

LGRAKE@KU.EDU  
LANCERAKE.COM

### **BIOGRAPHY**

For nearly 50 years, I have been learning, practicing, and teaching industrial design, often at the same time. Honored as a Fulbright Senior Scholar in 2015 and again in 2018, I am currently Professor of Industrial Design at the University of Kansas. I have also taught full-time at Auburn University and Carrington Technical Institute in Auckland, New Zealand. Additionally, I have taught short courses at Konstfackskolan in Stockholm and been a visiting professor at Staffordshire University in Stoke-on-Trent, England, Halmstad University in Sweden, the Royal Melbourne Institute of Technology in Australia, Kathmandu University in Nepal, and the Indian Institute of Technology-Bombay in Mumbai, India. My design research has been supported by private and public grants, and findings presented at national and international design conferences and institutions. For several years I have been using my experience as both teacher and practitioner of design to serve as an expert witness in design patent infringement and product liability cases. I was a signatory to the “133 Distinguished Industrial Design Professionals and Professors” Amicus Brief supporting Apple in its case against Samsung before the Supreme Court.

Working alone or in collaboration with other professionals, I have designed numerous commercial products, consumer products, aircraft and boat interiors, graphics, packaging, and exhibits. I was chosen by the editors at ID Magazine chose as one of the “Design 50”.

Recently, my research efforts have been focused toward using design to create sustainable craft-based enterprises in rural communities in the US, Africa, Nepal, and India.

### **EDUCATION**

1982 Master of Product Design (renamed Master of Industrial Design), 1982  
North Carolina State University, Raleigh, NC

1974 B.F.A. Industrial Design, 1974  
University of Kansas, Lawrence, KS

### **LICENSURES, CERTIFICATIONS, AND PROFESSIONAL TRAINING**

ICSID (International Congress of Societies of Industrial Design) City Move Interdesign workshop, Malmberget, Sweden. One of 40 designers, planners, artists, doctors and students invited to conceive of a new town and to develop a process for relocating cities that could be scaled and exported. 2009

IDSA Continuing Education Certificate, “How to Serve as an Expert Witness in Design Patent Litigation” Taught by Perry J. Saidman and Cooper C. Woodring, 2008

### **ACADEMIC APPOINTMENTS**

University of Kansas, Lawrence, KS  
Professor of Design, School of Architecture & Design, 2005 - Present  
Associate Professor, School of Fine Arts, 1991 - 2005  
Assistant Professor, School of Fine Arts, 1987 – 1990

The Royal Melbourne Institute of Technology, Melbourne, Australia  
Visiting Professor, Industrial Design, 2019 – Present

Kathmandu University, Kathmandu, Nepal  
Visiting Professor, Mechanical Engineering Department, 2019 – Present

The Indian Institute of Technology-Bombay, Mumbai, India  
Honorary Visiting Professor, Bamboo Studio, Industrial Design Center, 2016 – Present

Högskolan i Halmstad (Halmstad University)- Halmstad, Sweden  
Visiting Professor, Industrial Design, 2016 - Present

The Indian Institute of Technology-Bombay, Mumbai, India  
Visiting Professor, Bamboo Studio, Industrial Design Center, 2012

Carrington Technical Institute (subsequently renamed UNITEC Institute of Technology),  
Auckland, New Zealand  
Tutor & Course Supervisor, Product Design, 1985 – 1986

Auburn University, Auburn, AL  
Assistant Professor, Industrial Design, 1980 - 1984

#### **ADMINISTRATIVE ASSIGNMENTS**

Founder & Acting Director, Center for Design Research, Department of Design, 1994-2005  
Created the CDR to focus our graduate program to realign research efforts in collaboration with regional and national industry partners. I was solely responsible for the effort, establishing an effective design team, securing funding and research projects from industry partners including Learjet and H-P.

Associate Chairperson, Department of Design, 1990-1991  
Challenged to improve the Design Department's interaction with industry and to initiate cooperatives, collaboratives, and professional relationships.

UNITEC Institute of Technology, Auckland, New Zealand  
Course Supervisor, Design, 1985 – 1986  
Essentially the chairperson of Product Design, I was responsible for rewriting the curriculum and reorganizing the area. Our graduating students were remarkably successful- starting their own offices in New Zealand, but also working in major studios in the US, UK and Europe.

#### **PROFESSIONAL EXPERIENCE**

Infusion Design, Bonner Springs, KS  
Consultant, 2000 - 2016

The New Deal Playing Card Company, Leawood, KS  
Vice President Strategic Product Development, 1995 - 2005

Leon Paul, Ltd, London, England  
Design Consultant (sabbatical leave), 2001

Hans Skillius Design, Halmstad, Sweden  
Design Consultant (sabbatical leave), 1993

Interface Design Group, Milwaukee, WI  
Manager, Industrial Design, 1979 - 1980

Stan Johnson Design, Milwaukee, WI  
Design Director, 1978 - 1979

Anacomp (div Bell & Howell Co.), Hartford, WI  
Manager, Design Services, 1975 - 1978

Prism, Inc., Racine, WI  
Industrial Designer, 1974 – 1975



#### **PUBLICATIONS- BOOKS**

Bielenberg, J., Burn, M., & Galle, G. (n.d.). In E. E. Dickinson, Think Wrong. 127, 193-200.

ISBN: 9780692693322, 2016

This is a book about design innovation, and shares a story about my design process, and how I developed one of my product design ideas.

E. Zijlstra (Ed.), Booming Bamboo. Materia (Netherlands).

Images of my design "Woven Bamboo Bicycle" appear in this compilation of contemporary bamboo design.

Schütz, F. (in press). Innovative Bambus Materialien. arundoobiomaterials.

Images of my design "Woven Bamboo Bicycle" appear in this compilation of contemporary design featuring bamboo use in composites.

#### **PUBLICATIONS- CONFERENCE PROCEEDINGS**

Rosen, B. G., Bergman, M., Skillius, H., Eriksson, L., & Rake, L. (2010). On Linking Customer Requirements to Surfaces. In Proceedings of the 13th International Conference on Metrology and Properties of Engineering Surfaces, National Physical Laboratory, London, UK.

Rake, L. (1990). Industrial Design: Learning to Live Without Modernism. In Proceedings of the Industrial Designers of America Conference on Design Education, Pasadena, California.

Rake, L. (1989). Design is the Problem. In Proceedings of the School of Visual Arts' third annual National Conference on Liberal Arts and the Education of Artists, New York.

Rake, L. (1989). Taking Another Look at Design Education. In Proceedings of the Industrial Designers of America Conference on Design Education, Minneapolis.

#### **PUBLICATIONS- MULTIMEDIA**

Rake, L. G. (1984). Sketching Techniques for Industrial Designers. Auburn University: Learning Resource Center.

#### **PUBLICATIONS REFERENCING MY RESEARCH/CREATIVE WORK**

##### **MAGAZINES & VIDEO**

Dickinson, Elizabeth E. "The Pit That Swallowed a City" *Architect*. (October 2010)

Article written about the ICSID 2009 Interdesign workshop held in Malmberget, Sweden. I was quoted several times about the role designers play when we consider how to move populations as the result of natural or ecological events.

Saenz, Yvonne. "Beacon Alley Boards" Vimeo. video. (2014)

Reference to my design work in collaboration with HERObike, Greensboro, AL, from 2011 - present

Selden, Ben. "Semester Bike" Vimeo. video. (2013)

Reference to my bicycle design work, and my efforts to leverage design to create social impact in rural Alabama, HERObike, Greensboro, AL, from 2011 – present

##### **WEBSITES/BLOGS**

Walia, Nona "Bamboo-zled!" timesofindia (March 15, 2020)

Meisenzahl, Mary "This electric bike was designed in Nepal using local Bamboo to transport tourists and packages- here's how it works" Businessinsider, (June 22, 2020)

Redaksi "Becak 'Lucu' Kathmandu dari Bambu , majalahcsr (21 Februari, 2020)

Sexty, Jack "Introducing the Habre Eco Bike: a Nepalese e-cargo machine built from bamboo to beat the climate crisis", ebiketips (February 23, 2020)

Jewell, Nicole "Bamboo electric bike is designed for Kathmandu locals and tourists", inhabitat (February 19, 2020)

Myers, Lynne "habre eco bike is made from local bamboo and is designed to ease pollution in kathmandu", designboom (February 12, 2020)

Hernandez, Daisy "This Designer Repurposed Wine Barrels to Create a One-of-a-Kind Ride", Bicycling (March 21, 2019).

Coxworth, Ben, The Classy Cooper Bicycle is made from Old Wine Barrels" New Atlas (March 18, 2019).

Pomranz, Mike. "This Designer Turned a Wine Barrel into a Bicycle", Food and Wine (March 22, 2019).

King, Tierney, "Designing Bikes from Old Wine Barrels". ECN (March 20, 2019).

"The HEROs of Greensboro, Alabama: How One Nonprofit Is Changing Bike Design and Community Development" Design Good Design Good (<http://designgood.com/bike-design/>). internet. (2017)

Reference to my work research developing designs of bicycles, skateboards, and paddleboards made from bamboo or bamboo composites, in collaboration with HERO, a not-for-profit located in rural Greensboro, AL.

Bauman, Kat. "Can Braided Bamboo Shift Bike Frame Design?" CORE77 Website CORE 77. internet. (May 30, 2017)

Reference to my work research developing advanced designs of bicycles using woven bamboo composite tubes. Describes the continued development of a craft-based enterprise, HERObike-a result of a collaboration with HERO, a not-for-profit located in rural Greensboro, AL.

"A BAMBOO ROAD BIKE BORN FROM THE COLLABORATION BETWEEN LANCE RAKE AND HEROBIKE" design diffusion designdiffusion.com. internet. (May 4, 2017)

Reference to my work research developing advanced designs of bicycles using woven bamboo composite tubes. Describes the continued development of a craft-based enterprise, HERObike-a result of a collaboration with HERO, a not-for-profit located in rural Greensboro, AL.

Harper, Brad. "Bamboo Bikes Spur Economic Development in a Struggling Alabama County" momentummag.com Momentum. internet. (May 2, 2017)

Reference to my work research developing designs of bicycles, skateboards, and paddleboards made from bamboo or bamboo composites, in collaboration with HERO, a not-for-profit located in rural Greensboro, AL.

"lance rake's HERObike is fitted with woven bamboo tubes" In L. Zeitoun (Ed.) designboom designboom. internet. (May 2, 2017)

Reference to my work research developing advanced designs of bicycles using woven bamboo composite tubes. Describes the continued development of a craft-based enterprise, HERObike-a result of a collaboration with HERO, a not-for-profit located in rural Greensboro, AL.

Underwood, Allison. "Heroes of the Blackbelt" Good Grit...The Character of the South Good Grit (goodgritmag.com). internet. (December 1, 2016)

Reference to my work research developing designs of bicycles, skateboards, and paddleboards made from bamboo or bamboo composites.

Turner, Troy. "A BOOST OF BAMBOO" Yanko Design Yanko Design. Internet. (May 2015)  
This article describes the development of a woven bamboo/composite e-bike.

Boram, Brian. "Wanted for Hire: Bamboo Bicycle Builders in Hale County, Alabama" Arcade Arcade (arcadenw.org). internet. (Fall 2014)

Market success of the Semester bike and Beacon Alley Skateboard created demand for skilled craftspeople in the region.

"A Skateboard To Bring Back Local Manufacturing In The South Is Made From . . . Bamboo?" fastcoexist.com (Fast Company). internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"A Skateboard To Bring Back Local Manufacturing In The South Is Made From . . . Bamboo?" fastcoexist.com (Fast Company). internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"Art Pics: Bamboo Skateboards" Fad: Cool Art & Stuff. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"Beacon Alley Skateboard: eco-friendly bamboo skateboard by makelab and HERObike" wowozine (Wow Trend Magazine). internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 – 2014

"Beacon Alley Skateboards" CORE 77. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 – 2014

"Beacon Alley Skateboards" Fancy. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"Beacon Alley Skateboards" theawesomer.com. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"Beacon Alley Skateboards Kickstarting in Alabama" Impact Design Hub. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 – 2014

"Beacon Alley Skateboards' Woven Bamboo Deck" geekalabama.com. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"Beacon Alley Skateboards' Woven Bamboo Deck" Original Paperbacks. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"Makelab & HERObike – Beacon Alley Skateboards" hellocoton.fr. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"Makelab & HERObike – Beacon Alley Skateboards" Whitezine.com. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"makelab + HERObike weave durable bamboo composite skateboards" designboom.com. internet. (2014)  
Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 – 2014

Oldmixon, Rachelle. Aljazeera America. "A fixie made out of oversized grass" TECHKNOW blog. (January/February 2014).  
Television segment that featured the Semester bicycle and the process of making bamboo bikes in rural Alabama.

"Woven Bamboo Composite Skateboards" compositestoday.com. internet. (2014)

Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

"Woven Bamboo Skateboard Muscle" Common Marketplace. internet. (2014)

Reference to my work as a result of designing Beacon Alley Skateboard HERObike, Greensboro, AL, from 2013 - 2014

Estes, Cary. "Elegantly Designed Bicycle Business" Business Alabama. internet. (September 2014)  
Reference to the Semester Bike design and the development of a craft-based enterprise, HERObike-a result of consulting with HERO, a not-for-profit located in rural Greensboro, AL.

"A Bamboo Bike Designed to Lift People from Poverty" Wired.com. internet. (2013)

Reference to the Semester Bike design and the development of HERObike-a result of consulting with HERO, a not-for-profit located in rural Greensboro, AL. Details the positive social change that can come from using design thinking to leverage local skills and resources.

"Semester Bicycles- Hextube bamboo composite frames made in the rural South" In J. Thomas (Ed.) Bicycle Design.net. internet. (2013)

Reference to the Semester Bike design and the development of HERObike-a result of consulting with HERO, a not-for-profit located in rural Greensboro, AL.

"Semester Bike designed to create jobs in Alabama" Fast Company. internet. (2013)

Reference to the Semester Bike design and the development of HERObike-a result of consulting with HERO, a not-for-profit located in rural Greensboro, AL.

"The Semester Bicycle represents a new take on sustainable design, while supporting the local community of Greensboro in Alabama, USA." Design Indaba. internet. (2013)

Reference to the Semester Bike design and the development of HERObike-a result of consulting with HERO, a not-for-profit located in rural Greensboro, AL.

"The Semester Bicycle: An Environmentally and Socially Responsible Bike" ambikamelville.com. internet. (2013)

Reference to the Semester Bike design and the development of a craft-based enterprise, HERObike-a result of consulting with HERO, a not-for-profit located in rural Greensboro, AL.

"Semester Bike built to drive positive change". Design Boom. (August 2013)

Reference to the Semester Bike design and the development of HERObike-a result of consulting with HERO, a not-for-profit located in rural Greensboro, AL.

"Semester Bike Project" CORE 77. (2013).

Reference to the Semester Bike design and the development of HERObike-a result of consulting with HERO, a not-for-profit located in rural Greensboro, AL.

#### **INVITED PRESENTATIONS/LECTURES- INTERNATIONAL**

Rake, L. (2019, 23 August). *Designs in Tall Grass*. Presentation for Design Students at RMIT, Melbourne, Australia.

Rake, L. (2016). *Designing in Bamboo*. Presentation at Halmstad University, Halmstad, Sweden.

Rake, L. (2016, 24 April). *Design Hacks*. Presentation before faculty and student body for The Department of Architecture and Urban Planning, Institute of Engineering, Tribhuvan University, Pulchowk Campus, Kathmandu, Nepal.

Rake, L. (2016). *7 Words You Should Never Use in Design School*. Presentation before faculty and undergraduate student body at The Industrial Design Center, Indian Institute of Technology, Mumbai, India.

Rake, L. (2015, July 10). *Symbiotic Relationship Between Design & Engineering*. Med By SCE - Shamoon College of Engineering, Department of Mechanical Engineering, Beer-Sheva, Israel.

Rake, L. (2015, December 15). *Learning to Make, Making to Learn*. Konstfacksolan, Stockholm, Sweden.

Rake, L. (2012, October). *Think Wrong*. Presentation before faculty and graduate student body at The Industrial Design Center, Indian Institute of Technology, Mumbai, India.

Rake, L. (2012, September). *Why Design Matters*. Presentation before faculty and graduate student body at Orchid International School, Nashik, India.

Rake, L. (2012, April). *What Little I Have Learned*. Presentation, before faculty and design student body at Nelson Mandela Metropolitan University, Port Elizabeth, South Africa.

Rake, L. (2008). *Unapologetically American*. Presentation, SVID Designdagen conference at Halmstad University, Halmstad, Sweden.

Rake, L. (2007). *Industrial Design, Learning to Live Without Modernism*. Paper, for Industrial Design and Innovation Engineering graduate students and faculty at Halmstad University, Halmstad, Sweden.

Rake, L. (2007). *My Life Aboard the Titanic*. Presentation, Konstfackskolan, the national art & design school, Stockholm, Sweden.  
Attended by Industrial Design faculty, undergraduate, and graduate students.

Rake, L. (2007). *Towards Reality in Industrial Design*. Presentation, Institute for Design, Umeå University, Umeå, Sweden.  
Attended by faculty and graduate students Industrial, Transportation, and Interaction Design.

Rake, L. (2005). *The Future of Graduate Design Education*. Presentation for "Designdagen"- Swedish Design Day, SVID, Swedish Society of Industrial Design, Halmstad, Sweden.  
2005 has been designated as "Design Year".

Rake, L. (2004). *Industrial Design Education and Practice in a Multidisciplinary and International Context*. Presentation for administrators, faculty, and students, Halmstad University, Halmstad, Sweden.

Rake, L. (1986). Panelist, National Art and Design Education Symposium, Auckland, New Zealand.

Rake, L. (1985). *Experiential Learning in Industrial Design Education*. Presentation, New Zealand Society of Industrial Designers regional meeting, Auckland, New Zealand.

#### **INVITED PRESENTATIONS/LECTURES- NATIONAL**

Rake, L. G., Durkin, T.-G. G., & Gajewski, D. A. (2015, December 8). *Navigating Functionality in Design Patent Prosecution and Litigation*. Strafford Publishing webinar.

Rake, L. (2003). *Ergonomics: A Commonsense Approach for Industrial Designers*. Presentation, 9th Annual National Ergonomics Conference and Exposition, Las Vegas.

Rake, L. (1994). *The Beauty of Chaos; the Chaos of Beauty*. Presentation, Symposium Design Thinking- Expressive Solutions, Helsinki, Finland.

Rake, L. (1991). *Toward Reality in Industrial Design*. Presentation, Product Semantics and Visual Semiotics in Design Conference, Helsinki, Finland.

Rake, L. (1990). *Industrial Design: Learning to Live Without Modernism*. Presentation, Industrial Designers of America Conference on Design Education, Pasadena, CA.  
Published in the proceedings.

Rake, L. (1989). *Design is the Problem*. Presentation, School of Visual Arts' third annual National Conference on Liberal Arts and the Education of Artists, New York.  
Published in the proceedings.



Rake, L. (1989). *Taking Another Look at Design Education*. Presentation, Industrial Designers of America Conference on Design Education, Minneapolis.  
Published in the proceedings.

#### **GRANTS/AWARDS- EXTERNAL**

Rake, L. *Fulbright Global Scholar Award*, Fulbright Senior Scholar Program. My research project, “*Reimagining the Future of Mobility with a Sustainable Bamboo Bicycle*”, is a project that began with a research and design phase in Melbourne, Australia and moves to a prototype and testing phase in Kathmandu, Nepal. I am designing a bamboo cargo bike to improve the congestion and pollution in urban Kathmandu and hopefully leads to new employment opportunities for rural craftspeople in Nepal. (July 2019 – January, 2020)

Rake, L. *Fulbright-Nehru Academic and Professional Excellence Award*, Fulbright Senior Scholar Program. My research project, “*Using Design Thinking to Create Sustainable Craft-Based Enterprise in India*”, investigated strategies that explore how to use design thinking to take traditional craft skills into the future, using innovative design and technology to improve the income of rural craftspeople and help create transformational change. (January 2016 - June 2016)

Rake, L. *Adventure Travel Luggage*. Bass Pro Shop, Springfield, MO (2006).

Rake, L. *Exploring Innovations in Fan Design*. Hunter Fans, Memphis, TN (2006).

Rake, L. *New Product Ideas for Family Camping Tents*. Wenzel, St. Louis, MO (2005).

Rake, L. *Portable Outdoor Exhibition Space*. Big Dog Motorcycles, Wichita, KS (2003).

Rake, L. *New Product Ideas for the Scrapbook Market*. Cardinal Brands, St. Louis, MO (2002).

Rake, L. *Back to School Product Design. Investigation, Analysis, and Design*. Cardinal Brands, St. Louis, MO (2001 - 2002).

Rake, L. *New Product Opportunities in the Recreational Boat Industry*. Investigation, Analysis, and Design. Infusion Design, Bonner Springs, KS (2001 - 2002).

Rake, L. *Recreational Vehicle Design for a New Market Segment. Investigation, Analysis, and Design*. MountainHigh Coachworks, Ontario, CA (1999 - 2000).

Rake, L., & Geil, D. M. *Fencing Shoe Design*. United States Olympic Committee (1998).  
Consultant with Dr. Geil.

Rake, L. *Design of a Closed System Bearing Oiler*. Trico Manufacturing, Pewaukee, WI (1995 - 1998).

Johnson, J., Rake, L., *Design of Motor Assist Standing Wheelchairs*. Small Business Innovation Research Program Grant. FENA DESIGN, St. Cloud, MN. (1995 - 1998).

Nagengast, D., & Rake, L. *DIY In Field Refrigeration for Small Organic Farms* North Central Region Sustainable Agriculture Research and Education Program. U.S. Department of Agriculture (1995).

Rake, L. *Laptop Computer Design*. Compaq Computers, Houston, TX (1994).

Rake, L. *Interior Concepts, 31-A*. Learjet, Wichita, KS (1994).

Rake, L. *3D Modeling Hardware & Software, Equipment Grant*. Intergraph Corporation, USA, and Intergraph Sverige, AB (1993).

Rake, L. *Using Traditional Materials and New Technologies in an Alternative Design Strategy*. SOR, Inc. Olathe, KS (1988).

#### **GRANTS/AWARDS- INTERNAL**

Gore, N. & Rake, L. *"Electrifying the Dotte Mobile Grocer Demonstration Kitchen."* University of Kansas General Research Fund (2019)

Herstowski, A. & Rake, L. *Mapping Study Abroad to the Major*, Faculty Support Grant Fund from the Office of Study Abroad (2016). Connecting with Study Abroad partners in Finland, Sweden, and Denmark.

Sabbatical leave in Mumbai, India. Conducted research at the Bamboo Studio, Industrial Design Center, Indian Institute of Technology-Bombay. (2012)

Rake, L. *A Pilot Project to Develop and Implement the Alodia Afrika Design Office*. University of Kansas (2011). Using Design Thinking to open new product and market possibilities for a woman's textile co-op in Hamburg, South Africa.

Rake, L. *Driving Without Distraction: We Have an App for That .....*, Transportation Research Institute, The University of Kansas (2010).

Rake, L. *Design of the Next Generation General Aviation Aircraft Interior*. University of Kansas (2004).

Sabbatical leave in Stratford-upon-Avon, England. Conducted research at the Leon Paul office in London, England to design and test fencing equipment including weapons, scoring equipment, and footwear. (2001)

Rake, L., & Ewing, D. M. Proposal Development for NASA's University Earth System Science (UnESS) Program. *Mapping Greenland Ice*. Research and Development Fund, the University of Kansas (2000 - 2001).

Rake, L. *Design of High- Performance Titanium Sabre using 3D Solid Modeling, Testing, and Evaluation Technologies*. University of Kansas (1999).

Sabbatical leave in Halmstad, Sweden. Professional design practice in the office of Hans Skillious, Halmstad, Sweden. (1993)

Rake, L. *The Electronic Mock-up as a Conceptual Tool for Industrial Designers*. University of Kansas (1993).

Rake, L. *Product Development Using an Alternative Design Strategy*. University of Kansas (1989).

Rake, L. G., & Taylor, D. J. B. *The Efficacy of Training on the Development of Creative Thinking Ability*. Research Grant-In-Aid, Auburn University (1984).

#### **SELECT DESIGN WORK IN WOOD & BAMBOO**

Rake, L. *Whiskey Barrel Stave Bicycle, (June, 2019)*

After executives at Buffalo Trace Distillery in Frankfort, KY saw images of the Wine Barrel Stave Bicycle, they asked me to prototype a bicycle made from whiskey Barrel Staves. It is currently being considered as a fleet bike for tours of their Canadian distillery.

Rake, L. *Wine Barrel Stave Bicycle, (December, 2018- March, 2019)*

Presented at the 2019 North American Handmade Bicycle Show. It is currently being considered as a fleet bike for wine tours in Napa, California.

Rake, L. & Adhikary, N. *Abari Bamboo Bike, (May 2016 – September, 2017)*.

Design and development of a new generation bamboo bicycle initially designed and prototyped at the Abari architecture studio in Kathmandu, Nepal in April, 2016 as part of my Fulbright research.

Rake, L. Mass Production Bamboo Bicycle for Bikeshare System, IIT-Bombay Campus, Mumbai, India, (February 2016 – April, 2017). This bike was designed to be easily, quickly, and reliably manufactured in large numbers. It was also designed to be easily repaired and adjusted in the field.

Rake, L. *Sidekick*, HERObike, Greensboro, AL. (September, 2015- February, 2016)  
I designed the Sidekick Balance Bike for HERO, a not-for-profit located in Greensboro, AL, as a way to create quality craft-based jobs. Most of my design work for HERO explores the use of bamboo- a local resource in rural Alabama. The Sidekick is designed for easy fabrication in the Greensboro workshop. The Sidekick was further developed and prototyped in India at the Industrial Design Center at the Indian Institute of Technology-Bombay in Mumbai in spring, 2016 as part of my Fulbright research.

Rake, L. *Sidekick Senior*, IIT-B, IDC, Mumbai, India (January, 2016- May, 2016)  
I designed the Sidekick Senior at the Industrial Design Center at the Indian Institute of Technology-Bombay in Mumbai in spring, 2016 as part of my Fulbright research. I leveraged the simplicity of design of the Sidekick Balance bike to create a pedal-powered version with 20" wheels.

Rake, L. *Inframe Storage System*, IIT-B, IDC, Mumbai, India (January 2016- May, 2016) The Inframe Storage System is a woven bamboo basket designed to ride inside the main triangle structure of a commuter-style bicycle. It was designed at the Industrial Design Center at the Indian Institute of Technology-Bombay in Mumbai in spring, 2016 to create job opportunities for rural and urban bamboo artisans in India as part of my Fulbright research.

Rake, L. *Whalebone Stand Up Paddleboard*, HERObike, Greensboro, AL. (June 2014 - July 2015)  
I designed the Whalebone Stand Up Paddleboard for HERO, a not-for-profit located in Greensboro, AL, as a way to create quality craft-based jobs. The Whalebone is an innovative skin-on-frame design that uses an inexpensive but strong structure made of bamboo, covered with inexpensive sign vinyl. Whalebone was designed to be made in weekend workshops in the Greensboro workshop.

Rake, L. *Woven Tube Road Bike*, HERObike, Greensboro, Alabama. (August 2012 - February 2013). I designed the Woven Tube Bike for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. Most of my design work for HERO explores the use of bamboo- a local resource in rural Alabama. The Woven Tube bike is an innovative bamboo/carbon fiber composite that is extremely lightweight. The Woven Tube Road Bike was shown in the North American Handmade Bicycle Show in Louisville, KY in March 2014.

Rake, L. *Bamboost*, HERObike, Greensboro, Alabama. (August 2012 - February 2013). I designed the Bamboost e-Bike for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. Bamboost is an innovative bamboo/carbon fiber composite bike that utilized the same aviation-inspired sandwich composite technology developed for the Beacon Alley Skateboards. It was shown in the North American Handmade Bicycle Show in Louisville, KY in March 2015.

Rake, L. *Beacon Alley Skateboards*, HERObike, Greensboro, Alabama. (January 2013 - December 2014) I designed the Beacon Alley Skateboard for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. The skateboard is a bamboo composite design that is a fusion of handcraft and aviation-inspired high tech sandwich composite materials and techniques.

Rake, L. *Flatpack Bicycle*, HERObike, Greensboro, Alabama. (August 2012 - February 2013). I designed the Flatpack Bike for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. Most of my design work for HERO explores the use of bamboo- a local resource in rural Alabama. The Flatpack is a bamboo composite design that also uses waterjet cut aluminum panels. The entire bicycle arrives in a small box and can be easily assembled with minimal tools. The Flatpack was shown in the North American Handmade Bicycle Show in Charlotte, NC in March 2014.

Rake, L. *Semester Bicycles*, HERObike, Greensboro, Alabama. (January 2012 - February 2014)  
I designed the Semester Bike for HERO, a not-for-profit located in Greensboro, Alabama, as a way to create quality craft-based jobs. Most of my design work for HERO explores the use of bamboo-

a local resource in rural Alabama. The Semester is a bamboo composite design. The Flatpack was shown in the North American Handmade Bicycle Show in Denver in February, 2013.

#### **EXHIBITIONS- DESIGN**

"Sustainable Revolution"- Architecture Biennale 2021, Zuecca Project Space, Venice, Italy, September, 2021.

"Wine Barrel Stave Bike" introduced. North American Handmade Bicycle Show, Sacramento, CA, March, 2019.

"Keep Moving: Shifting Gears!" Design Museum of Chicago. Two of my bamboo bikes featured in this show. November 2018- March, 2019.

*Dharavi* bikeshare bicycle design introduced. North American Handmade Bicycle Show in Hartford, CT. in March 2018.

Semester bicycle design featured in *Engaged: Campus and Community Scholars Working Together for the Public Good*—an exhibit to recognize and celebrate community engagement and engaged scholarship at the University of Kansas. 2017

*Bamboost* e-bike design introduced. North American Handmade Bicycle Show in Louisville, KY in March 2015.

*Woven Tube* bicycle design introduced. North American Handmade Bicycle Show. Charlotte, NC in March 2014.

*Semester & Flatpack* bicycle designs introduced. North American Handmade Bicycle Show in Denver, CO in February 2013.

#### **PERMANENT COLLECTIONS**

Rake, L. *New Deal Playing Cards*, Stuart and Marilyn R. Kaplan Playing Card Collection, the most comprehensive collection in the United States (1998) Designed in 1995.

Rake, L. *New Deal Playing Cards*, Deutsches Spielkarten-Museum, permanent collection, Leinfelden-Echterdingen, Germany (1998) Designed in 1995.

#### **PATENTS**

Rake, L., Patent. "Process for Making Braided Bamboo Laminated Composite Tubing US Provisional Patent" (abandoned)

Rake, L., Patent. "Process for Making Structural Tubing with Bamboo and Reinforcing Fiber Material US Provisional Patent" (abandoned)

Rake, L., Patent. "Power System", US Utility Patent US20090152944. (Approved: 2009).

Rake, L., Patent. "Extension for a Golf Club Shaft and Method of Installing the Same", US 20080081708. (Approved: 2008).

Rake, L., Patent. "Fishing Bobber", US Utility Patent Pending. (Approved: 2007).

Rake, L., Patent. "Footstool/Ladder", US Utility Patent Pending. (Approved: 2007).

Rake, L., Patent. "Temperature Gauge/ Barometer", US Design Patent D 538694. (application: 2005, Approved: 2006).

Rake, L., Paul, B., Patent. "Protective Fencing Mask", US 20030070202; US 20020157167; US 6,701,536 B2; US 6,820,286 B2. (Approved: 2003).

Rake, L., Patent. "Playing Cards with Gripping Surface", US 5,490,676. (Approved: 1998).

Rake, L., Patent. "Guitar Case", D 265146. (Approved: 1982).

**EXPERT WITNESS- DESIGN**

Whitaker Chalk Swindle & Schwartz PLLC, Design Expert, Representing Delta T v. Dan'

Marchant & Gould, Design Expert (2021)  
Liaigre v. California Furniture Collection

Lewis Roca Rothgerber Christie, LLP, Design Expert, Glendale, CA (2021).  
Caravan Canopy v. WalMart

Fish & Richardson P.C., Design Expert, Austin, TX (2018-2019).  
Representing Kingston v. PAVO

Sterne, Kessler, Goldstein & Fox, Expert Witness, Washington, DC (2018-2019).  
Representing Juul in an ITC matter.

Morgan Lewis, Design Expert, Palo Alto, CA (2018-2019)  
Representing Gavrieli v. Soto Massini

Ice Miller, LLP, Design Expert, Philadelphia, PA. (2018).  
Representing Regalo International v. Summer Infant

Fish & Richardson P.C., Design Expert, Dallas, TX. (2018).  
Representing Amazon v. Jumpsport, Inc,

Thompson Coburn, Design Expert, St. Louis, MO. (2017).  
Representing Wesfield Outdoors v. Haingaertner and Walsh

Kirkland & Ellis, Design Expert, Chicago, IL (2018).  
Representing The Chamberland Group v. Techtronic Industries

Lewis Roca Rothgerber Christie, LLP, Design Expert, Glendale, CA (2018).  
Representing Blumenthal Distributing v. Herman Miller

Thompson Coburn, Design Expert, St. Louis, MO. (2017).  
Representing Post v. General Mills

Perkins Coie, Design Expert, Seattle, WA (Sept 2016).  
Representing Amazon v. Daimler AG

Woodard, Emhardt, Moriarty, McNett & Henry, LLP, Design Expert, Indianapolis, IN (Winter 2016 - Present). Representing Knauf Insulation before USPTO

Banner & Witcoff, Design Expert, Chicago and Portland, OR (Winter 2015).  
Representing Nike v. Sketchers

Blakely Law Group, Design Expert, Manhattan Beach, CA (2016).  
Representing Deckers/ Uggs Australia in a design patent dispute

Sterne, Kessler, Goldstein & Fox, Expert Witness Testimony, New York, NY (2015). Design Expert for Reexamination of Apple iPhone Design Patents

Orrick, Herrington & Sutcliffe LLP, Design Expert, Menlo Park, CA (2016). Represented Belkin in a patent infringement case versus Acrox

Alston & Bird, LLP, Expert Witness Testimony, Palo Alto, CA (2014). Expert witness for light reflectors design patent case before the ITC

Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Expert Witness Testimony, Washington DC (2014). Design Declaration before the Appeal Board, USPTO (housewares)  
Kelly IP, LLP, Expert Witness Testimony, Washington DC (2013 - 2014). Design Declaration before the Appeal Board, USPTO (electronic cables)

Winston & Strawn, LLP, Expert Witness Testimony, Los Angeles, CA (2013 - 2014). Design Analysis for utility patent infringement case (laptop and tablet accessories)

Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Expert Witness Testimony, Washington DC (2013). Design Analysis for design patent infringement case (cameras).

Oblon, Spivak, McClelland, Maier & Neustadt, L.L.P., Expert Witness Testimony, Alexandria, VA (2013). Design Analysis for design patent infringement case (bedroom slippers).

Amster Rothstein & Ebenstein LLP, Expert Witness Testimony, New York, NY (2012). Design Analysis for design patent infringement case (bedroom slippers).

Miller Canfield, Expert Witness Testimony, Chicago, IL (2011 - 2012). Design Analysis, Report for a design patent infringement case (bedroom slippers).

White & case, LLP., Expert Witness Testimony, New York, NY (2011 - 2012). Design Analysis, Report, and Deposition Testimony for USB Drive design patent case before the ITC.

Baker Botts L.L.P., Expert Witness Testimony, Houston, TX (2010 - 2011). Design Analysis, Report, for a design patent infringement case (juice bottle caps).

Polsinelli Shughart, P.C., Expert Witness Testimony, St. Louis, MO (2010 - 2011). Design Analysis, Report, for a design patent infringement case (refrigerated floral cases).

Husch Blackwell Sanders LLP, Expert Witness Testimony, St. Louis, MO (2009). Color Analysis, for a trade dress case.

Wooten, Honeywell, Kimbrough, Gibson, Doherty and Normand, P.A., Expert Witness Testimony, Orlando, FL (2007 - 2009) Design Analysis, Testing, for a product liability case (consumer seating).

Allen & Vellone, P.C., Expert Witness Testimony, Denver, CO (2008). Design Analysis, for a design patent infringement case (footwear).

Allen, Dyer, Doppelt, Mibrath & Gilchrist, P.A., Expert Witness Testimony, Orlando, FL (2008). Design Analysis, for a design patent infringement case (apparel).

Holbrook Law Office, Expert Witness Testimony, Orlando, FL (2000 - 2001). Design Analysis, Testing, for a product liability case (contract seating).

Rausch Hendicks German May, Expert Witness Testimony, Kansas City, MO (1999 - 2000). Defense expert for design patent infringement case.

Skepnek & Maddox, Expert Witness Testimony, Lawrence, KS (1998). Center for Design Research, The University of Kansas. Created forensic computer animation for a medical malpractice case.

Purdy & Flynn, Expert Witness Testimony, Fort Lauderdale, FL (1994 - 1996). Design Investigation, Analysis, Modeling for a product liability case.

Holbrook & Hardy, Expert Witness Testimony, Orlando, FL (1992 - 1994). Design Investigation, Analysis, Modeling for a product liability case.



#### **PROFESSIONAL DESIGN PROJECTS/CLIENT LIST**

Over the past 30 years, I have worked as a professional designer; working in corporate design studios, consulting offices, or as a freelance designer on a very broad range of projects. This includes the design of motorcycles, air circulators, aircraft interiors, micrographic readers, orthopedic traction systems, knives, space heaters, furniture, power tools, retail fixtures, electronic controls, playing cards, games, work environments, cranes, lawn and garden tractor, trade show exhibits, string trimmers, snowmobiles, VHS cassettes, medical products, audio amplifiers, industrial electrical control housings, bags, back to school products, electrical substation enclosures, excavator cabs, bird houses and feeders, fence posts, tool cabinets, boat interiors, motor coach interiors, and plumbing fixtures.

**Armani/ Embraer**, São José dos Campos, São Paulo, Brazil  
Aircraft Interior Design.

**ADS**, Huntsville, AL  
Branding, Research and Design.

**Adams Aircraft**, Mojave, CA  
Aircraft Interior Design.

**Aerion**, Dallas, TX  
Supersonic Business Jet interior design

**Aeroflex**, Wichita, KS  
Product Design

**Aero Nimbus**, Malaysia  
Asian Airshow Exhibition Design.

**Aladdin Industries**, Nashville, TN  
Camping Products.

**Alberta Aerospace**, Alberta, Canada  
Design Proposal, Aircraft Interior Design.

**Alfa-Laval, AB**, Stockholm, Sweden  
Agricultural Product Design.

**Auburn University School of Pharmacy**, Auburn, AL  
Pharmacy Patient Consultation Booth.

**Auckland University School of Medicine**, Auckland, NZ  
Asthma Inhaler.

**Baker Electronics**, Miami, FL  
Aircraft IFE Switches.

**Beauty Brands**, Kansas City, MO  
Interior/ Fixture Design.

**Bell Helicopter**, Dallas, TX  
Helicopter Shuttle Interior

**Bell & Howell**, Lincolnwood, IL  
Communications and Office Product Design.

**Bergström**, Halmstad, Sweden  
Promotional Products Design.

**Birkenstock, USA**, Novato, CA  
Store Fixture Design.

**Bolens**, Port Washington, WI  
Lawn Tractor Design, Product Graphics.

**Bombardier**, Montreal, Canada  
Business Jet Interior Design.

**Bose Research**, Boston, MA  
Store Fixture Design.

**Brian Russell Designs**, Auckland, NZ  
Highchair Design.

**Briggs & Stratton**, Milwaukee, WI  
Exhibit Design.

**Bruning International**, Itasca, IL  
Office Product Design, Product Graphic Design.

**Bucyrus-Erie**, Milwaukee, WI  
Heavy Equipment Design, Product Graphic Design.

**Bushnell**, Lenexa, KS  
Night Vision Monocular Design.

**Cardinal Brands**, St. Louis, MO  
Office Products, Softgoods Design

**Caterpillar**, Peoria, IL  
Footwear Display System.

**Chicagofest**, Chicago, IL  
Festival Graphic Design.

**Collins Communications Technologies**, Milwaukee, WI  
Branding, Graphic Design.

**Coleman**, Wichita, KS  
Product Design

**Crabtree Music**, Milwaukee, WI  
Graphic Design.

**Cramer, Inc**, Kansas City, MO  
Office Furniture Design.

**Cubcrafters**, Yakima, WA  
Aircraft Interior Design.

**Cutler-Hammer**, Milwaukee, WI  
Exhibit Design.

**Drott Manufacturing**, Wausau, WI  
Heavy Equipment Design, Product Graphic Design.

**Eagle Creek**, San Diego, CA  
Store Fixture Design.

**Embraer**, São Jose, Brazil  
Aircraft Interior Design.

**Fairchild-Dornier**, Oberpfaffenhofen, Germany  
Paint schemes, Product Graphic Design.

**Filer & Stowell**, Milwaukee, WI  
Heavy Equipment Design, Product Graphic Design.

**Fischer & Paykel**, Auckland, NZ  
Control Design.

**Företagsutvecklarna**, Växjö, Sweden  
Gas Candle Design.

**Galaxy Aerospace**, Dallas, TX  
Aircraft Interior Design.

**Gametime, Inc.**, Fort Payne, AL  
Outdoor Furniture Design.

**Global Express**, Montreal, Canada  
Regional Jet Interior Design.

**Grahm Transmissions**, Milwaukee, WI  
Product Graphic Design.

**Harley-Davidson**, Milwaukee, WI  
Motorcycle Design, Model Building.

**Hawker/Beechcraft**, Wichita, KS  
Aircraft Interior Design.

**Helio**, Bristol, TN  
Aircraft Interior Design Proposal

**Hustler/ Excel**, Hesston, KS  
Commercial Lawnmower Design, Side-by-Side Vehicle Design

**Huhtamaki**, Desoto, KS  
Commercial Product Design.

**ICOR, AB**, Stockholm, Sweden  
Medical Product Design.

**IKEA**, Stockholm, Sweden  
Clothes Hanger Design, Recycling Bin Design.

**J.I. Case Company**, Racine, WI  
Heavy Equipment Design, Product Graphics.

**Jockey International**, Kenosha, WI  
Exhibit Design, Store Fixture Design.

**Kohler**, Kohler, WI  
Exhibit Design.

**Larson/Glastron**, Little Falls, MN  
Leisure Boat Design.

**Learjet div of Bombardier**, Wichita, KS  
Corporate Aviation Interior Design.

**Leon Paul**, London, England  
Fencing Mask, Footwear, Scoring Box Design.

**Marathon Electric**, Wausau, WI  
Store Fixture Design.

**Martin Industries**, Florence, AL  
Electric Space Heater Design.

**Matthews Heater Co.**, Albertville, AL  
Electric Space Heater Design.

**Micro Design**, Hartford, WI  
Product Design, Corporate Identity, Strategic Planning.

**Micron Corporation**, Iron Ridge, WI  
Product Design, Corporate Identity, Strategic Planning.

**Minder Systems**, Auckland, NZ  
Electronic Control Design.

**Nauter's Swan**, Pietarsaari, Finland  
Yacht Design.

**New Deal Playing Cards**, Leawood, KS  
Product Design, Corporate Identity, Strategic Planning.

**Newell Motorcoach**, Miami, OK  
Motorcoach Design, Product Planning.

**Pantone**, New York, NY  
Bag, CD Case, Softgoods, Notebook Design

**Perceptive Software**, Kansas City, KS  
Trade Show Design.

**Perm-a-Store**, Wichita, KS  
Product Design.

**Polaris**, Roseau, MN  
Snowmobile Design, Product Graphic Design.

**Poulan**, Shreveport, LA  
String Trimmer Design, Lawnmower Design.

**Raaco**, Copenhagen, Denmark  
Plastic Toolbox Design.

**Raetheon**, Wichita, KS  
Aircraft Interior Design.

**Ranger Boats**, Flippin, AR  
Boat Design

**Rayovac**, Madison, WI  
Product Design.

**Rubbermaid**, Huntersville, NC  
Product Design.

**Schroeder & Tremayne**, St. Louis, MO  
Product Design- Brushes, Cleaning Products

**S.O.R. Inc.**, Olathe, KS  
Pressure Switch Design, Workstation Design Planning.

**Singapore Airlines**, Singapore  
Corporate Aircraft Interior Design.

**Snorkel**, Kansas City, MO  
Paintscheme, Product Graphic Design.

**Spectrum**, San Diego, CA  
Aircraft Interior Design

**Sutherland Engineering**, Lawrence, KS  
Audio Amplifier Design.

**The North Face**, Oakland, CA  
Store Fixture Design.

**Trek Bicycles**, Baraboo, WI  
Product Graphic Design.

**Wal-Mart**, Bentonville, AR  
Point-of-Sale Design, Interior Design.

**Walker Manufacturing**, Racine, WI  
Exhibit Design.

**Weed Eater**, Houston, TX  
String Trimmer Design, Lawnmower Design.

**Western Publishing**, Racine, WI  
Exhibit Design.

**Xerolet**, Carson, CA  
Product Design.

**Xikar**, Kansas City, MO  
Product Design, Strategic Product Design.

#### **UNIVERSITY OF KANSAS- RECENT TEACHING**

Spring 2021

INDD 378 Special Problems in Design, Footwear Design

INDD 302 Intermediate Industrial Design Studio

INDD212 Basic Industrial Design Drawing

Fall 2020

INDD 284 Basic Industrial Design Studio

INDD 312 Drawing for Industrial Design

Spring 2020

INDD 302 Intermediate Industrial Design Studio

INDD 378 Problems in Industrial Design:Footwear Design

Spring 2019

INDD 378 Special Problems in Design, Bicycle Design

INDD 302 Intermediate Industrial Design Studio

Winter, 2019

INDD 378 Problems in Industrial Design: East Palo Alto Multidisciplinary Workshop

Fall 2018

INDD 284 Basic Industrial Design Studio

INDD 378 Footwear Design

Spring 2018

ADS 531 Internship

ARCH600 Special Topics- Haiti

ARCH600	Special Topics- Utility Bicycle Design
INDD 302	Intermediate Industrial Design Studio (2 sections)
INDD 378	Problems in Industrial Design: Electric Guitar Design & Theory
Fall 2017	
ADS 531	Internship
INDD 284	Basic Industrial Design Studio (2 sections)
INDD 378	Problems in Industrial Design: Designing Footwear
INDD 715	Industrial Design- Graduate Studio
Spring 2017	
ADS 560	Topics in Design: Push Bikes and Paddleboards (Alabama)
ADS 560	Topics in Design: Electric Guitar Design & Theory
ADS 580	Special Problems in Design
INDD 302	Intermediate Industrial Design Studio
Fall 2016	
INDD 284	Basic Industrial Design Studio
INDD 378	Problems in Industrial Design: Photoshop ID Product Design
INDD 446	Advanced Industrial Design Studio
INDD 580	Senior Industrial Design Studio
Spring 2016	
ADS 560	Topics in Design: Push Bikes and Paddleboards (Alabama)
INDD 378	Problems in Industrial Design: Push Bikes and Paddleboards
Fall 2015	
INDD 284	Basic Industrial Design Studio
INDD 378	Problems in Industrial Design: Guitar Design and Theory
INDD 446	Advanced Industrial Design Studio
Spring 2015	
INDD 302	Intermediate Industrial Design Studio
INDD 555	Portfolio
Fall 2014	
ADS 560	Topics in Design: Drawing for Industrial Design II
INDD 284	Basic Industrial Design Studio
INDD 378	Problems in Industrial Design: Guitar Design and Theory
INDD 446	Advanced Industrial Design Studio
Summer 2014	
ADS 560	Topics in Design: Bamboo, Alabama
INDD 378	Problems in Industrial Design: Bamboo, Alabama
Spring 2014	
ADS 560	Topics in Design:
ADS 580	Special Problems in Design
INDD 302	Intermediate Industrial Design Studio
INDD 378	Problems in Industrial Design: Bamboo Skateboard Workshop
INDD 555	Portfolio
Fall 2013	
ADS 560	Topics in Design: Basic Transportation Design
ADS 580	Special Problems in Design
INDD 378	Problems in Industrial Design: Basic Transportation Design
INDD 446	Advanced Industrial Design Studio



#### **SERVICE- UNIVERSITY**

Member (Elected)

University of Kansas University Senate. (August 2016 - July 2019)

Member (Elected)

University of Kansas Faculty Senate. (August 2016 - July 2019)

Member (Appointed by KU Faculty Senate President) Ad Hoc Committee on Post-Tenure Review.  
Reviewed Procedures for KU Post Tenure Review Process (Fall 2015 - Spring 2016)

#### **SERVICE- SCHOOL OF ARCHITECTURE & DESIGN**

Chair (Appointed)

School Council. The School Council advises the Dean on strategic and administrative issues and serves as a sounding board for the Dean regarding any planned initiatives and University directives that affect the School. (February 2021 - Present)

Member (Appointed)

Faculty Affairs Committee. (August 2020 - Present)

Common Shop. (Fall 2016 - Spring 2018)

Ad-Hoc Committee Post-Tenure Review. Analysis and review of KU post-tenure review procedures. (Spring 2015)

Ad Hoc Maker Space. (Fall 2014 - Spring 2015)

#### **SERVICE- DEPARTMENT OF DESIGN**

Design Chair Review Committee. (August 2020 - June 2021)

Faculty Evaluation Committee. (August 2020 - June 2021)

Chair (Appointed) Industrial Design Search Committee. (Fall, 2017-Spring, 2018)

Representative (Appointed) Industrial Design Area Coordinator. (Fall 2017 - Spring 2019)

Member (Appointed) Promotion & Tenure. (Fall 2017 - Spring 2019)

Member (Appointed) Undergraduate Studies. (Fall 2016 - Spring 2019)

Member (Appointed) Departmental Bylaws. (Fall 2016 - Spring 2018)

#### **SERVICE- PROFESSIONAL**

Industrial Designers Society of America. Vice Chair of the Design Protection Section (2019 - 2021)

#### **HONORS AND AWARDS FOR SCHOLARSHIP**

Educator Award, Industrial Design Society of America (IDSA). (2019)

“The IDSA Education Award is presented in recognition of significant, distinguished, and long-term contributions of career or tenured faculty to the field of industrial design academia. Further, these individuals have earned the respect and admiration of colleagues and students for their method and practice of teaching industrial design. Individuals are nominated by a peer or student for this distinction and a nomination must be accompanied by letters of recommendation on behalf of the candidate. All candidates who qualify are rigorously evaluated by IDSA's Awards Committee and subsequently approved by IDSA's Board of Directors before being bestowed with this great honor.” From the IDSA website

Fulbright Global Scholar Award. “Reimagining the Future of Mobility with a Sustainable Bamboo Bicycle”. I will be working with colleagues in Melbourne Australia and Kathmandu Nepal to design and prototype a bicycle for use by smallholder farmers in rural Nepal. (2019-2020)

Fulbright-Nehru Academic and Professional Excellence Award, Fulbright Senior Scholar Program. Professor Rake's Fulbright research project, "Using Design Thinking to Create Sustainable Craft-Based Enterprise in India", will investigate strategies that explore how to use design thinking to take traditional craft skills into the future, using innovative design and technology to improve the income of rural craftspeople and help create transformational change. (January 2016 - June 2016)

Outstanding Teacher- Department of Design, University of Kansas Center for Teaching Excellence. (2010)

ID Magazine "Design 50". The editors at ID chose to profile the work of 50 US designers in their January/February 2004 Issue- one from each state. I was honored as the designer chosen to represent Kansas. (2004)

# EXHIBIT 2

**Lance G. Rake****Patent cases in which I've written reports and given testimony at trial:**

<u>Date</u>	<u>Case Name</u>	<u>Case Number</u>
2020	Pavo Solutions, LLC v. Kingston Technology, Inc	Central District of California Case No. 8:14-cv-1352-JLS (KES)
2019	Gavrielli Brands, LLC v. Soto Massini Corp.	District of Delaware Civil Action No.: 18-462-GMS)

**Patent cases in which I've written reports and given deposition testimony:**

<u>Date</u>	<u>Case Name</u>	<u>Case Number</u>
2021	Walmart Inc v. Caravan Canopy International, Inc	USPTO Patent Trial and Appeal Board Case IPR2020-01026
2021	Liagre, Inc v. California Furniture Coll., Inc., et al.	Central District of California Case No. 8:19-cv-01160 JAK-KES
2019	Herman Miller, Inc v. Blumenthal Distributing, Inc., et al.	Central District of California Case No. 2:17-cv-04279 JAK-SP
2016	Johns Manville Corp v. Knauf Insulation, LLC	USPTO Patent Trial and Appeal Board Case IPR2015-01453
2015	Acrox Technologies Co. Ltd v. Belkin International, Inc.	Northern District of California Case No. 3:14-CV-04956 JD
2012	In the Matter of CERTAIN UNIVERSAL SERIAL BUS ("USB") PORTABLE STORAGE DEVICES, INCLUDING USB FLASH DRIVES AND COMPONENTS THEREOF	U.S. ITC Investigation No. 337-TA-788
2011	Barker Company, Limited v. Air Innovations, Inc.	Southern District of Iowa Case No. 3:09-cv-00016-JAJ-CFB
2009	Lumber Liquidators v. Mountain Carpet	Eastern District of Virginia Stone Case No. 08 cv 00573
2008	Crocs v Australia Unlimited	District of Colorado Civil Action No. 07-cv-221

**Patent cases in which I've been retained and/or written expert reports:**

2021	Delta T, LLC v. Dan's Fan City, Inc.	Middle District of Florida Case No. 8:19-cv-1731- T- 33SPF
------	---	---

2019	Juul Labs, Inc.	Juul Patent Litigation Matters
2019	The Chamberlain Group, Inc. v. Techtronic Industries N.A., Inc.	Northern District of Illinois, Eastern Division Civil Action No. 16-CV-6113
2018	Amazon.com, Inc v. Jumpsport, Inc	USPTO Patent Trial and Appeal Board Case IPR2018-00714
2018	Regalo International, LLC v. Summer Infant, Inc.	District of Delaware Case No. 1:17-cv-01074-GMS
2018	Haingaertner and Walsh v. Westfield Outdoors, Inc.	Western District of Arkansas Case No. CV-17-5079
2017	In the Matter of: CERTAIN PASSENGER VEHICLE AUTOMOTIVE WHEELS	U.S. ITC Investigation No. 337-TA-1006
2017	Post Consumer Brands v. General Mills, Inc.	District of Minnesota Civil Action No. 17-cv-04915
2017	Beats Electronics, LLC v. Steven Lamar	Central District of California Case No. 2:14-cv-7537
2017	Po-Hsun Lin v. Belkin International, Inc.	Central District of California Case No. 8:16-cv-00628-JLS-DFM
2016	Fatboy the Original B.V. v. EMRG, LLC	Northern District of Texas, Dallas Division Civil Action No. 3:16-cv-02520
2016	NIKE, Inc v. Jezing Licensing, LLC	USPTO Patent Trial and Appeal Board Case IPR-
2016	NIKE, Inc v. Skechers USA, Inc	District of Oregon, Portland Division Case No.
2016	Deckers Outdoor Corporation v. Romeo & Juliette, Inc.	Central District of California Case No.: 2:15-cv-02812-ODW(CWx)
2014	Sensio Inc., v. Select Brands, Inc.	USPTO Patent Trial and Appeal Board Case IPR2013-00580
2014	Design Declaration Monster, Inc.	USPTO Patent Trial and Appeal Board
2014	In the Matter of: CERTAIN TIRES AND PRODUCTS CONTAINING SAME	U.S. ITC Investigation No. 337-TA-894

2014	Cyber Acoustics, LLC v. Belkin International, Inc	District of Oregon, Portland Division Civil Case No.: 3:13-cv-001144 SI
2013	High Point Design LLC v. Buyer's Direct Inc	Southern District of New York Civil Action No. 11-CIV-4530-KBF
2013	Nikon Corporation and Nikon, Inc v. Sakar International, Inc	Southern District of New York Civil Action No. 13-CV-7228
2012	Buyer's Direct, Inc v. Belk, Inc.	Civil Action No. 5:10-cv-00065-H
2012	Knoll, Inc, v. Moderno, Inc.	Southern District of New York Civil Action No. 11-CV-0488
2011	The Coca-Cola Company, v. PepsiCo, Inc.,	Plaintiff Civil Action No. 4:10-cv-0418
2008	Capsmith, Inc v. James S. Wysopal	Middle District of Florida Case No. 6:07-cv-01572-Orl-22KRS

**Product liability cases in which I've consulted, written reports, and/or provided deposition testimony:**

2015	Marlin Ward, v. St. Francis Health Center, Inc.	District Court of Shawnee County State of Kansas Case No. 13 C 001316
2015	Cayce Kavnar and Krissa Cavnar, v. The Saxon Group, Inc.	District Court of Cleveland County State of Oklahoma
2015	Marlin Ward, v. St. Francis Health Center, Inc.	District Court of Shawnee County State of Kansas Case No. 13 C 001316
2009	Jim Traweek v. Resin Partners, Inc US Leisure	9th Judicial Circuit Orange County, Florida Case No. 08-CA-0002229-0
2000	Design Analysis Report Chromecraft Furniture Advantage Series Guest Chair	Wooten, Honeywell, Kimbrough, Gibson, Doherty & Normand
1995	Scott Smith and Andrea Smith v. Meubles Morigeau Ltd	7th Judicial Circuit Broward County, Florida Case No. 95-350 (Div. 27)
1994	Binnie M. Hicks v. Ashley Furniture Industries Rent-A-Center	Circuit Court in Orange County, Florida Case No. CI 92-4747



# EXHIBIT 3



US00D737723S

(12) **United States Design Patent**  
**Ying et al.**

(10) **Patent No.:** **US D737,723 S**  
(45) **Date of Patent:** **\*\* Sep. 1, 2015**

(54) **SELF-BALANCING VEHICLE**

(56) **References Cited**

(71) Applicant: **Hangzhou Chic Intelligent Technology Co., Ltd.**, Hangzhou, Zhejiang Province (CN)

**U.S. PATENT DOCUMENTS**

(72) Inventors: **Jiawei Ying**, Hangzhou (CN); **Shaojun Cao**, Hangzhou (CN)

D647,991 S \* 11/2011 Sramek ..... D21/765  
8,469,376 B2 \* 6/2013 Kristiansen ..... 280/87.042  
2007/0273118 A1 \* 11/2007 Conrad ..... 280/87.042  
2011/0006497 A1 \* 1/2011 Chen et al. .... 280/87.042  
2012/0007331 A1 \* 1/2012 Hsieh ..... 280/221  
2012/0187648 A1 \* 7/2012 Chen ..... 280/87.042

(73) Assignee: **HANGZHOU CHIC INTELLIGENT TECHNOLOGY CO., LTD.**, Hangzhou, Zhejiang Province (CN)

\* cited by examiner

(\*\*) Term: **14 Years**

*Primary Examiner* — T. Chase Nelson

*Assistant Examiner* — Ania Aman

(21) Appl. No.: **29/511,915**

(74) *Attorney, Agent, or Firm* — Muncy, Geissler, Olds & Lowe, P.C.

(22) Filed: **Dec. 15, 2014**

(57) **CLAIM**

The ornamental design for a self-balancing vehicle, as shown and described.

(30) **Foreign Application Priority Data**

**DESCRIPTION**

Jun. 13, 2014 (CN) ..... 2014 3 0180556

(51) **LOC (10) Cl.** ..... **12-14**

(52) **U.S. Cl.**

USPC ..... **D12/1; D21/765**

(58) **Field of Classification Search**

USPC ..... D12/1, 163; D21/419, 421, 423, 426, D21/760, 765, 766, 769, 771, 776, 803; 280/87.042, 87.021, 87.041, 5.23, 280/5.39, 205, 209, 229, 266, 282, 851; 180/181, 5.26, 6.5, 7.1, 8.2, 65.8, 907, 180/218, 65, 13; 475/750  
CPC .. A63C 17/0033; A63C 17/01; A63C 17/016; A63C 2203/40; A63C 17/012; A63C 17/12; B62K 2202/00

See application file for complete search history.

FIG. 1 is a top plan view of a self-balancing vehicle showing our new design;

FIG. 2 is a bottom plan view thereof;

FIG. 3 is a rear elevational view thereof;

FIG. 4 is a front elevational view thereof;

FIG. 5 is a left side view thereof, the right side view being a mirror image thereof;

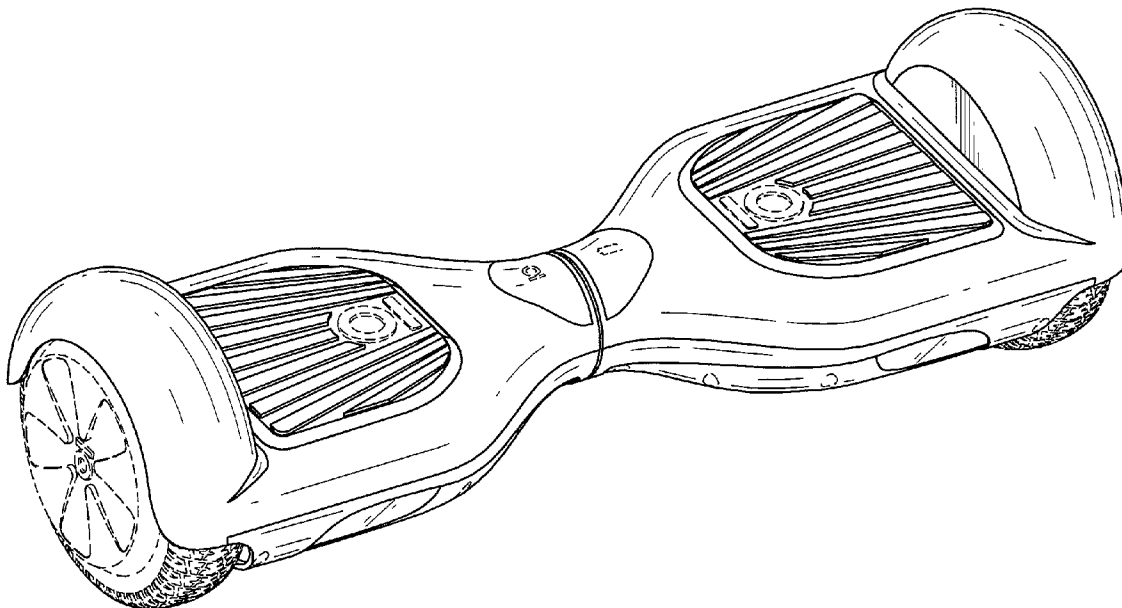
FIG. 6 is a rear, top, right perspective view thereof;

FIG. 7 is a front, top, left perspective view thereof; and,

FIG. 8 is a rear, bottom, left perspective view thereof.

The broken line showing is for the purpose of illustrating portions of the self-balancing vehicle and environment structure which form no part of the claimed design.

**1 Claim, 8 Drawing Sheets**

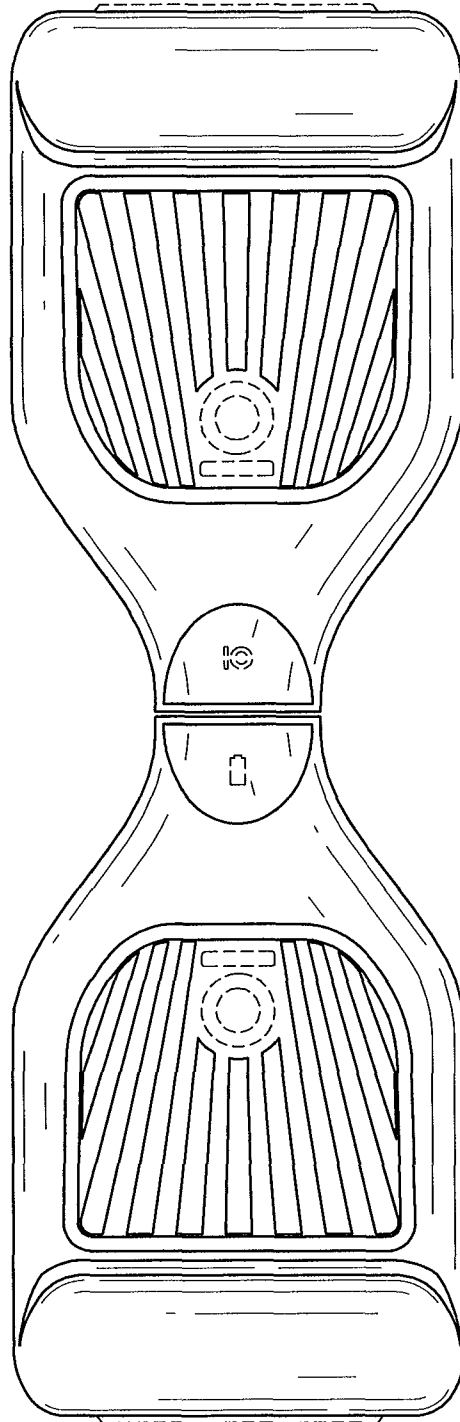


**U.S. Patent**

**Sep. 1, 2015**

**Sheet 1 of 8**

**US D737,723 S**



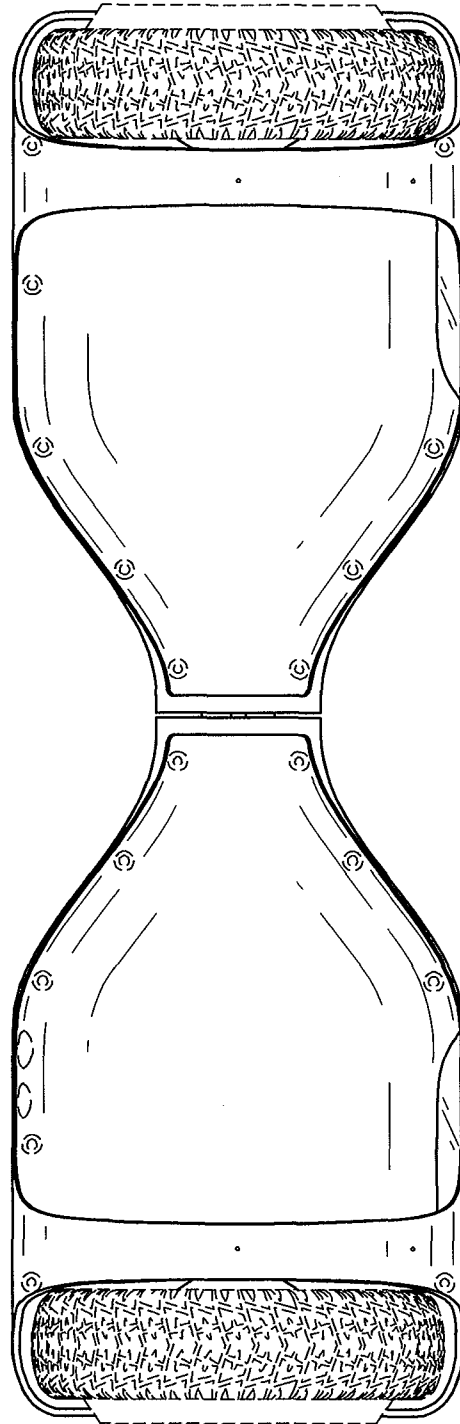
**FIG.1**

**U.S. Patent**

**Sep. 1, 2015**

**Sheet 2 of 8**

**US D737,723 S**



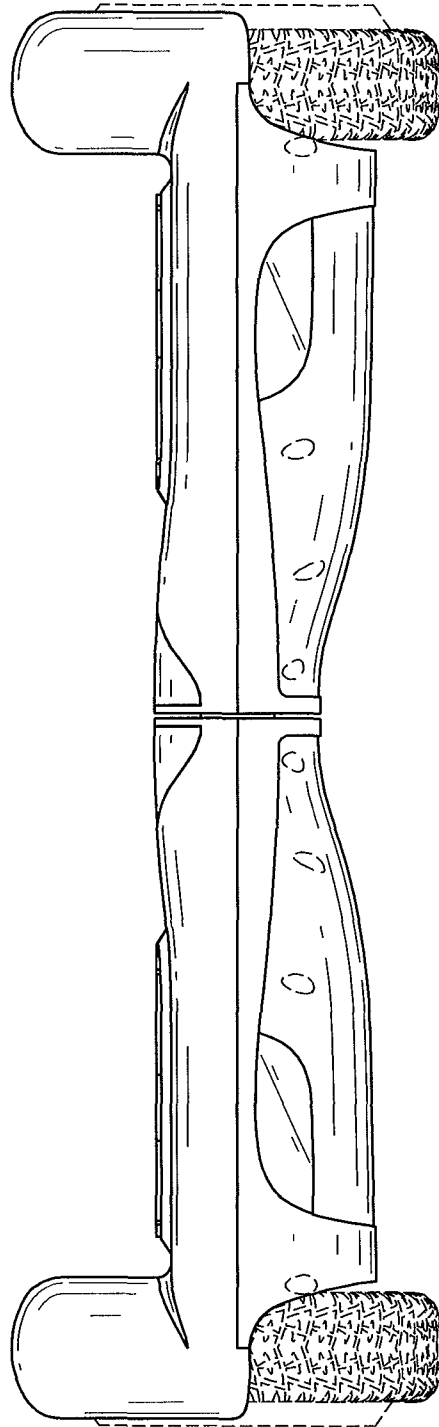
**FIG.2**

**U.S. Patent**

**Sep. 1, 2015**

**Sheet 3 of 8**

**US D737,723 S**



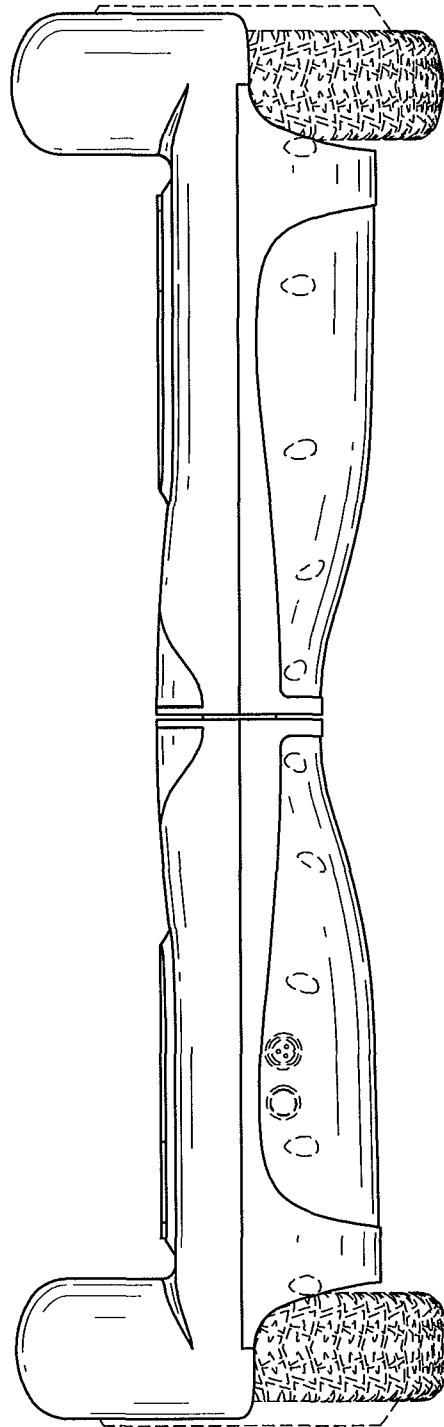
**FIG.3**

**U.S. Patent**

**Sep. 1, 2015**

**Sheet 4 of 8**

**US D737,723 S**



**FIG.4**

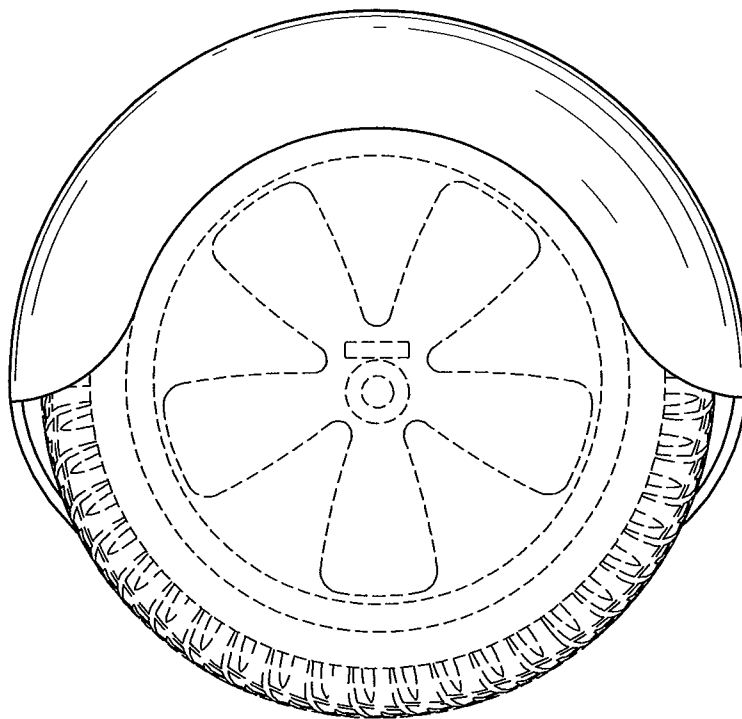


**U.S. Patent**

**Sep. 1, 2015**

**Sheet 5 of 8**

**US D737,723 S**



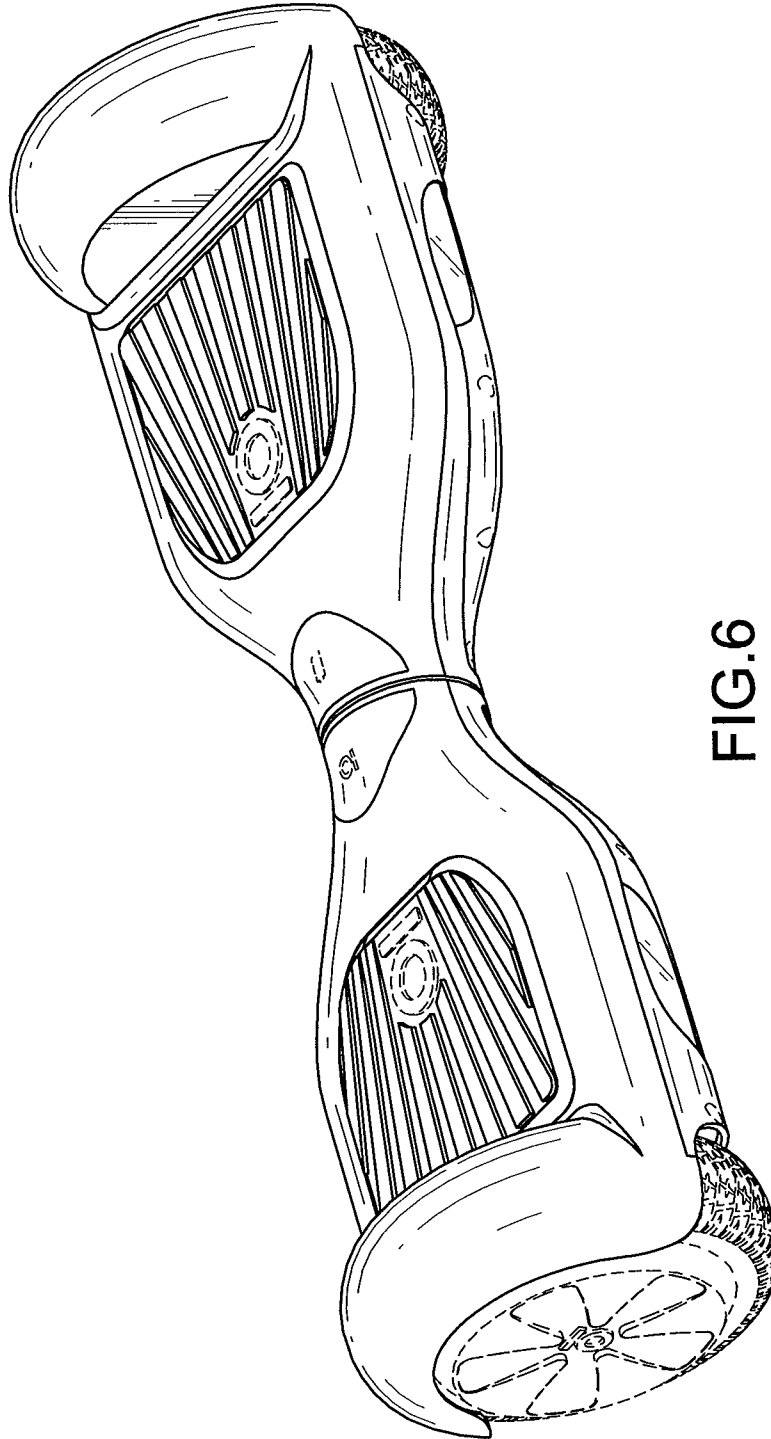
**FIG.5**

**U.S. Patent**

**Sep. 1, 2015**

**Sheet 6 of 8**

**US D737,723 S**



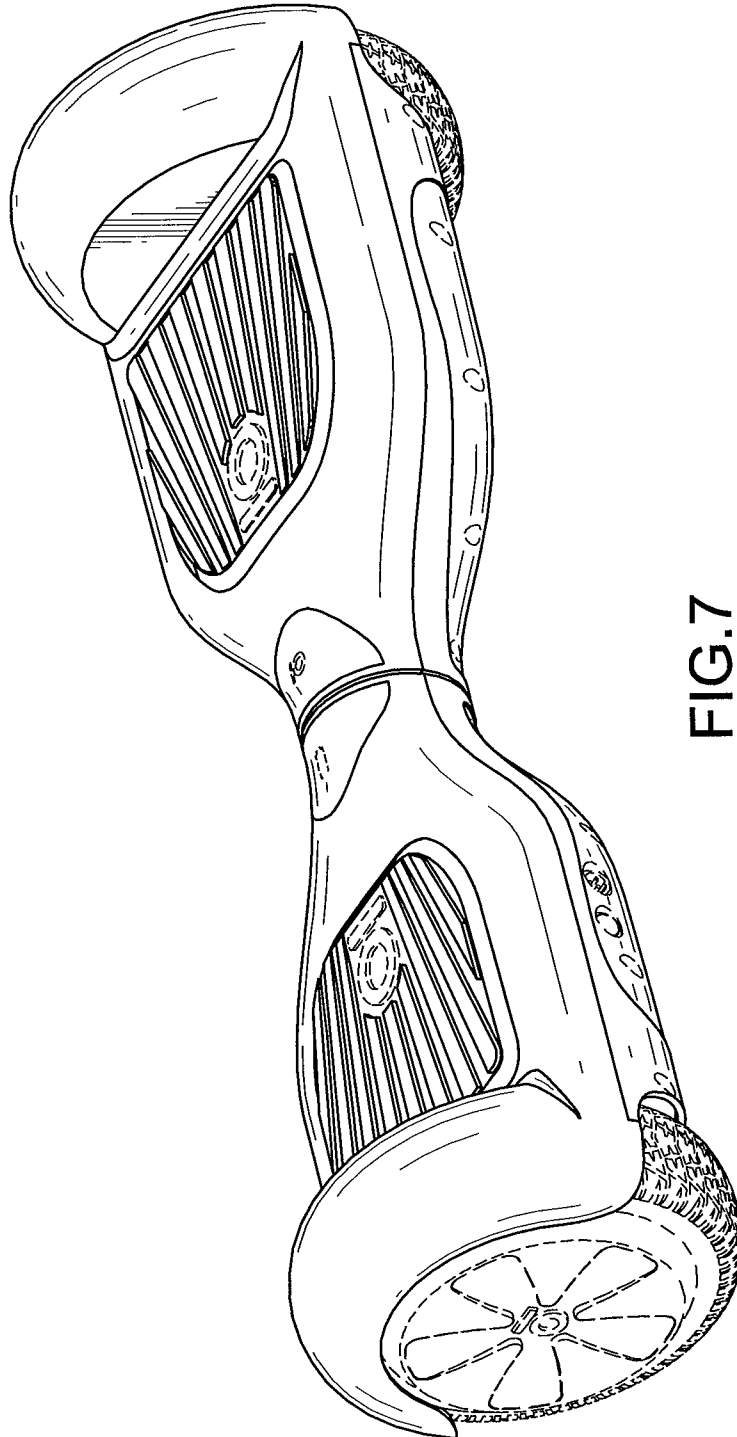
**FIG.6**

**U.S. Patent**

**Sep. 1, 2015**

**Sheet 7 of 8**

**US D737,723 S**

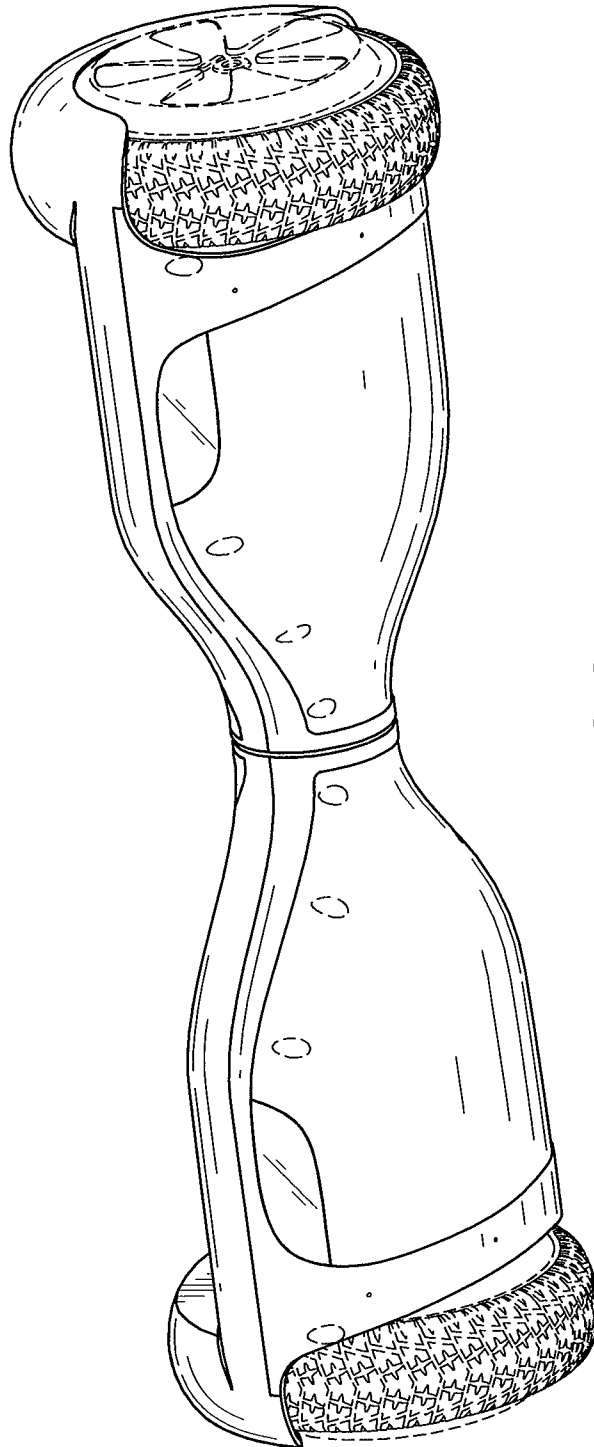


**U.S. Patent**

**Sep. 1, 2015**

**Sheet 8 of 8**

**US D737,723 S**



**FIG.8**

# EXHIBIT 4



US00D738256S

(12) **United States Design Patent**  
**Ying et al.**

(10) **Patent No.:** **US D738,256 S**  
 (45) **Date of Patent:** **\*\* Sep. 8, 2015**

(54) **SELF-BALANCING VEHICLE**

(56) **References Cited**

(71) Applicant: **Hangzhou Chic Intelligent Technology Co., Ltd.**, Hangzhou, Zhejiang Province (CN)

**U.S. PATENT DOCUMENTS**

(72) Inventors: **Jiawei Ying**, Hangzhou (CN); **Shaojun Cao**, Hangzhou (CN)

D647,991 S \* 11/2011 Sramek ..... D21/765  
 8,469,376 B2 \* 6/2013 Kristiansen ..... 280/87.042  
 2007/0273118 A1 \* 11/2007 Conrad ..... 280/87.042  
 2011/0006497 A1 \* 1/2011 Chen et al. .... 280/87.042  
 2012/0007331 A1 \* 1/2012 Hsieh ..... 280/221  
 2012/0187648 A1 \* 7/2012 Chen ..... 280/87.042

(73) Assignee: **HANGZHOU CHIC INTELLIGENT TECHNOLOGY CO., LTD.**, Hangzhou, Zhejiang Province (CN)

\* cited by examiner

(\*\*) Term: **14 Years**

*Primary Examiner* — T. Chase Nelson

*Assistant Examiner* — Ania Aman

(21) Appl. No.: **29/511,924**

(74) *Attorney, Agent, or Firm* — Muncy, Geissler, Olds & Lowe, P.C.

(22) Filed: **Dec. 15, 2014**

(57) **CLAIM**

The ornamental design for a self-balancing vehicle, as shown and described.

(51) **LOC (10) CL.** ..... **12-14**

**DESCRIPTION**

(52) **U.S. Cl.**

USPC ..... **D12/1; D21/765**

(58) **Field of Classification Search**

USPC ..... D12/1, 163; D21/419, 421, 423, 426,  
 D21/760, 765, 766, 769, 771, 776, 803;  
 280/87.042, 87.021, 87.041, 5.23,  
 280/5.39, 205, 209, 229, 266, 282, 851;  
 180/181, 5.26, 6.5, 7.1, 8.2, 65.8, 907,  
 180/218, 65, 13; 475/750  
 CPC .. A63C 17/0033; A63C 17/01; A63C 17/016;  
 A63C 2203/40; A63C 17/012; A63C 17/12;  
 B62K 2202/00

FIG. 1 is a top plan view of a self-balancing vehicle showing our new design;

FIG. 2 is a bottom plan view thereof;

FIG. 3 is a front elevational view thereof;

FIG. 4 is a rear elevational view thereof;

FIG. 5 is a left side view thereof, the right side view being a mirror image thereof;

FIG. 6 is a front, top, right perspective view thereof;

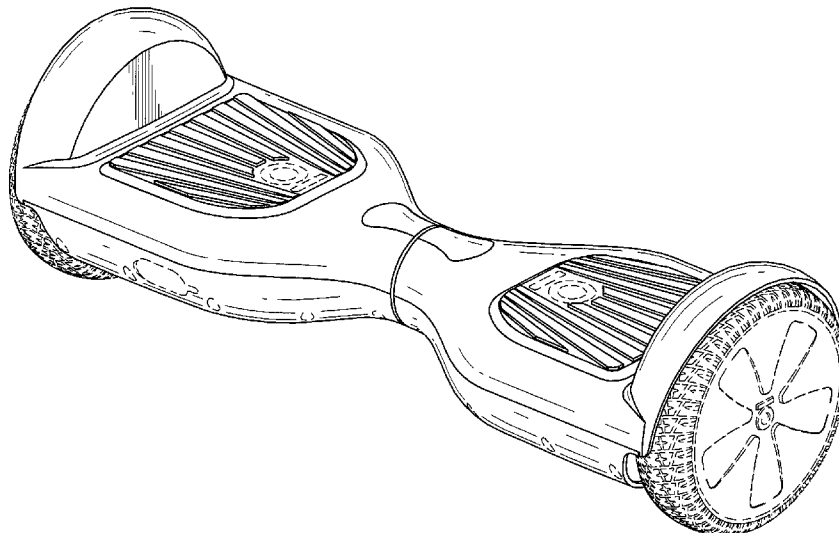
FIG. 7 is a rear, top, left perspective view thereof; and,

FIG. 8 is a rear, bottom, right perspective view thereof.

The broken line showing is for the purpose of illustrating portions of the self-balancing vehicle and environment structure which form no part of the claimed design.

See application file for complete search history.

**1 Claim, 8 Drawing Sheets**



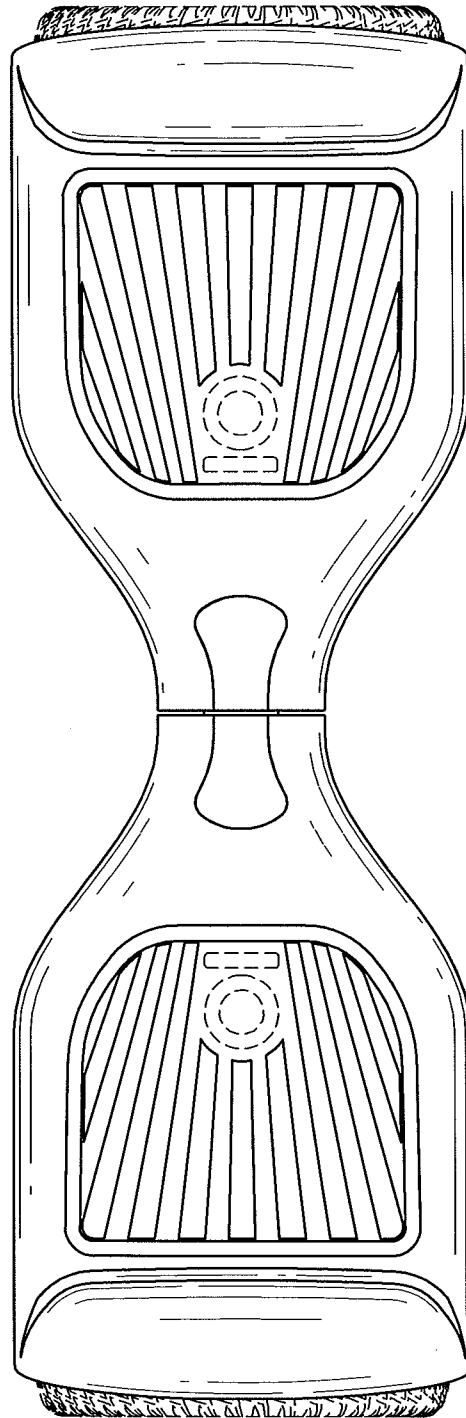


**U.S. Patent**

Sep. 8, 2015

Sheet 1 of 8

**US D738,256 S**



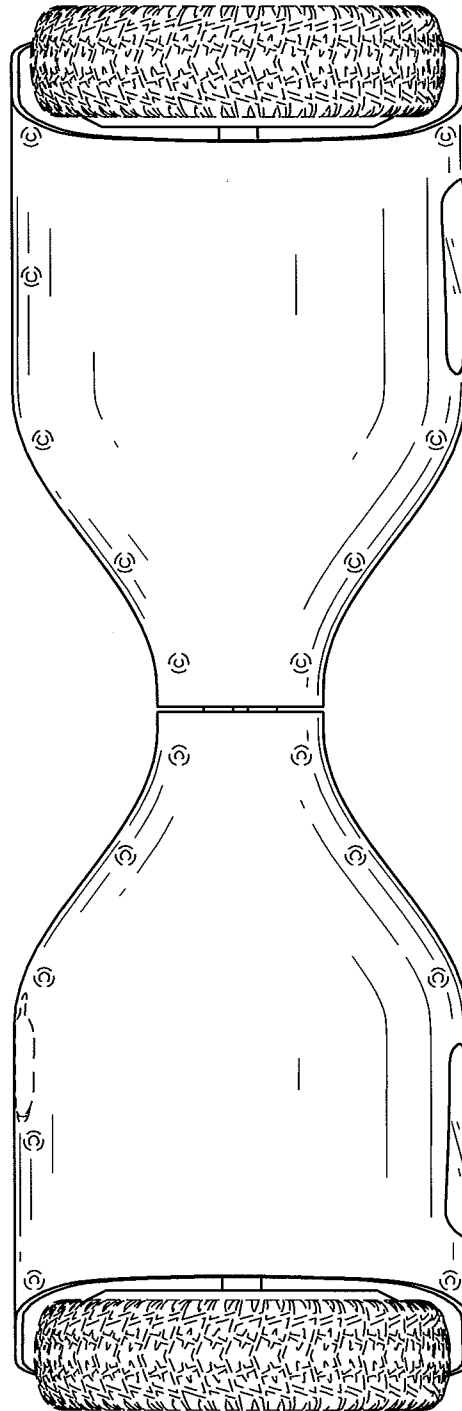
**FIG.1**

**U.S. Patent**

**Sep. 8, 2015**

**Sheet 2 of 8**

**US D738,256 S**



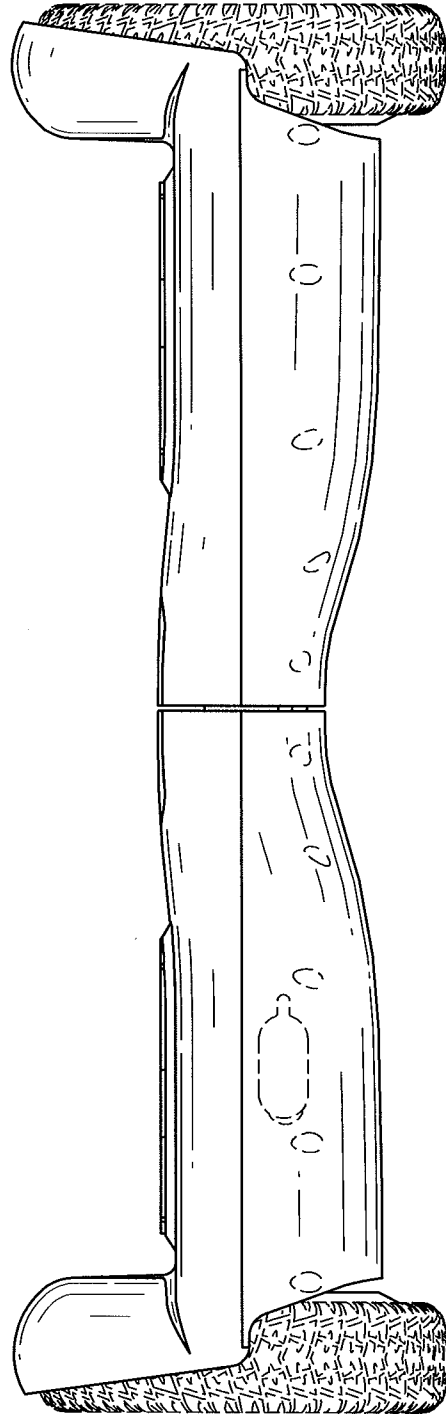
**FIG.2**

**U.S. Patent**

**Sep. 8, 2015**

**Sheet 3 of 8**

**US D738,256 S**



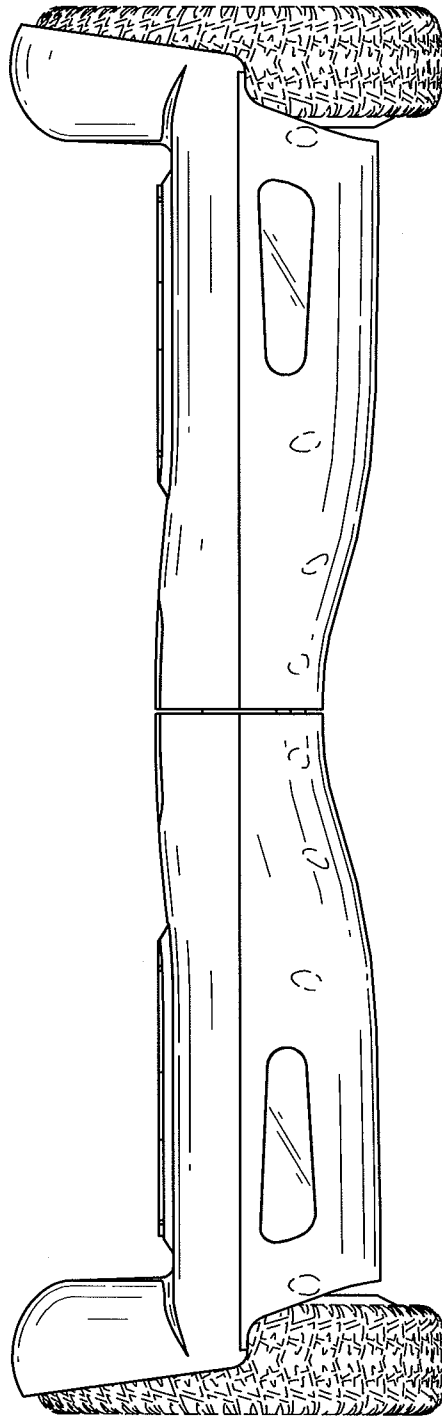
**FIG.3**

**U.S. Patent**

**Sep. 8, 2015**

**Sheet 4 of 8**

**US D738,256 S**



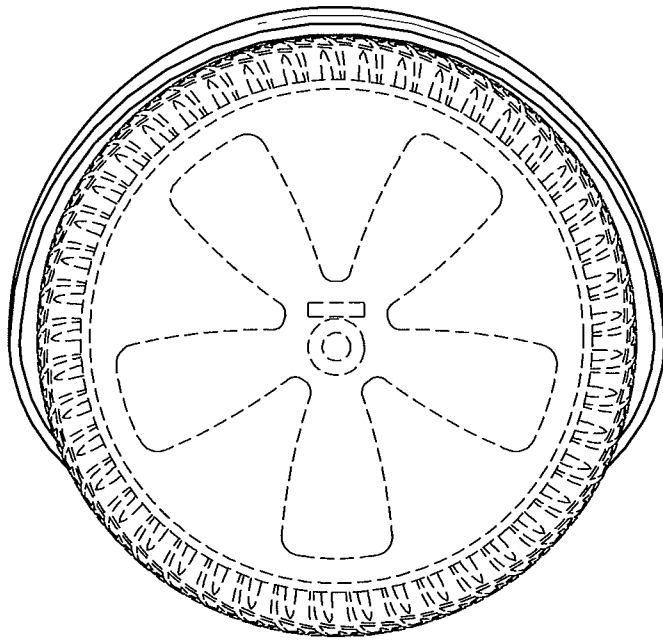
**FIG.4**

**U.S. Patent**

**Sep. 8, 2015**

**Sheet 5 of 8**

**US D738,256 S**



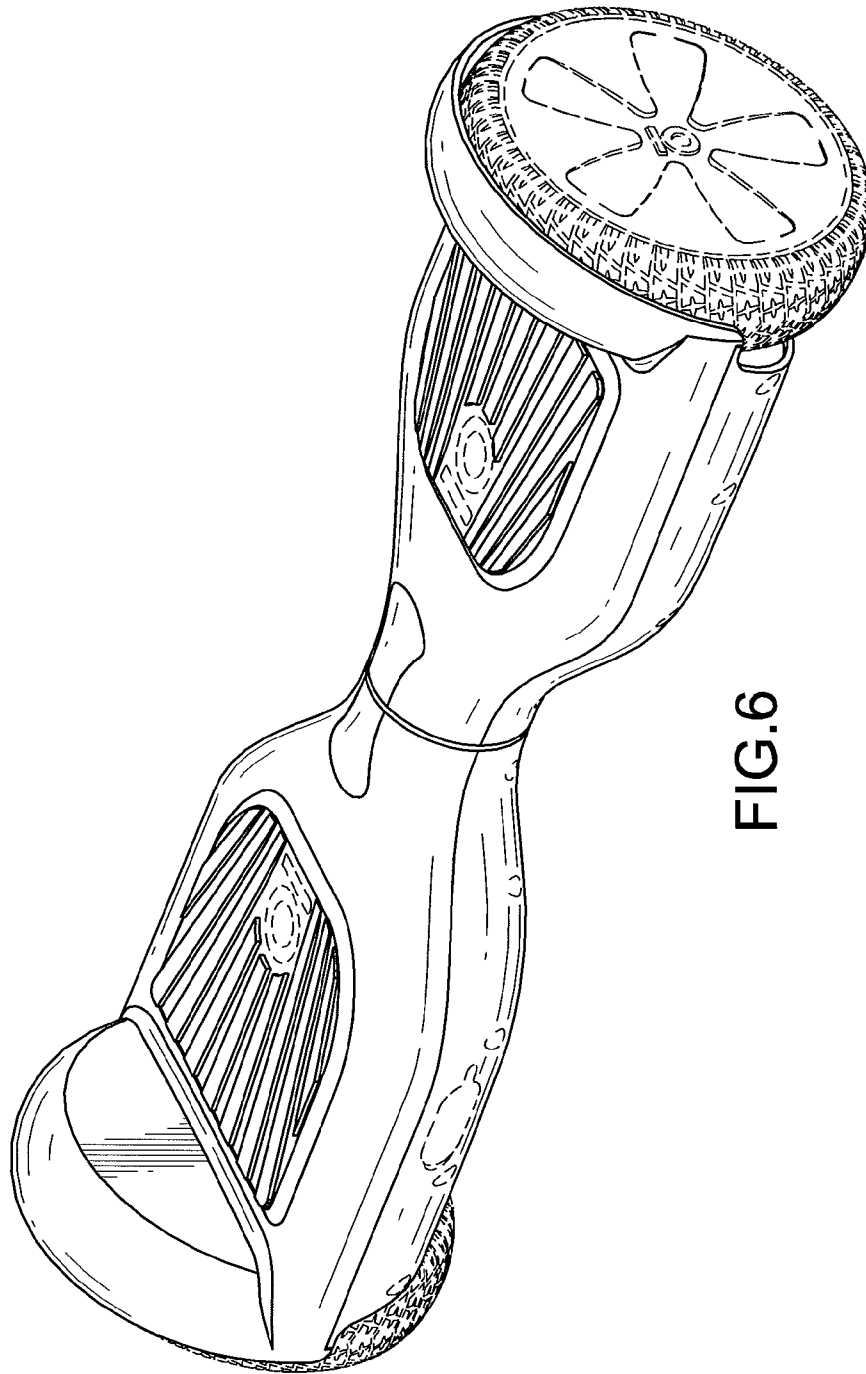
**FIG.5**

**U.S. Patent**

Sep. 8, 2015

Sheet 6 of 8

**US D738,256 S**



**FIG. 6**

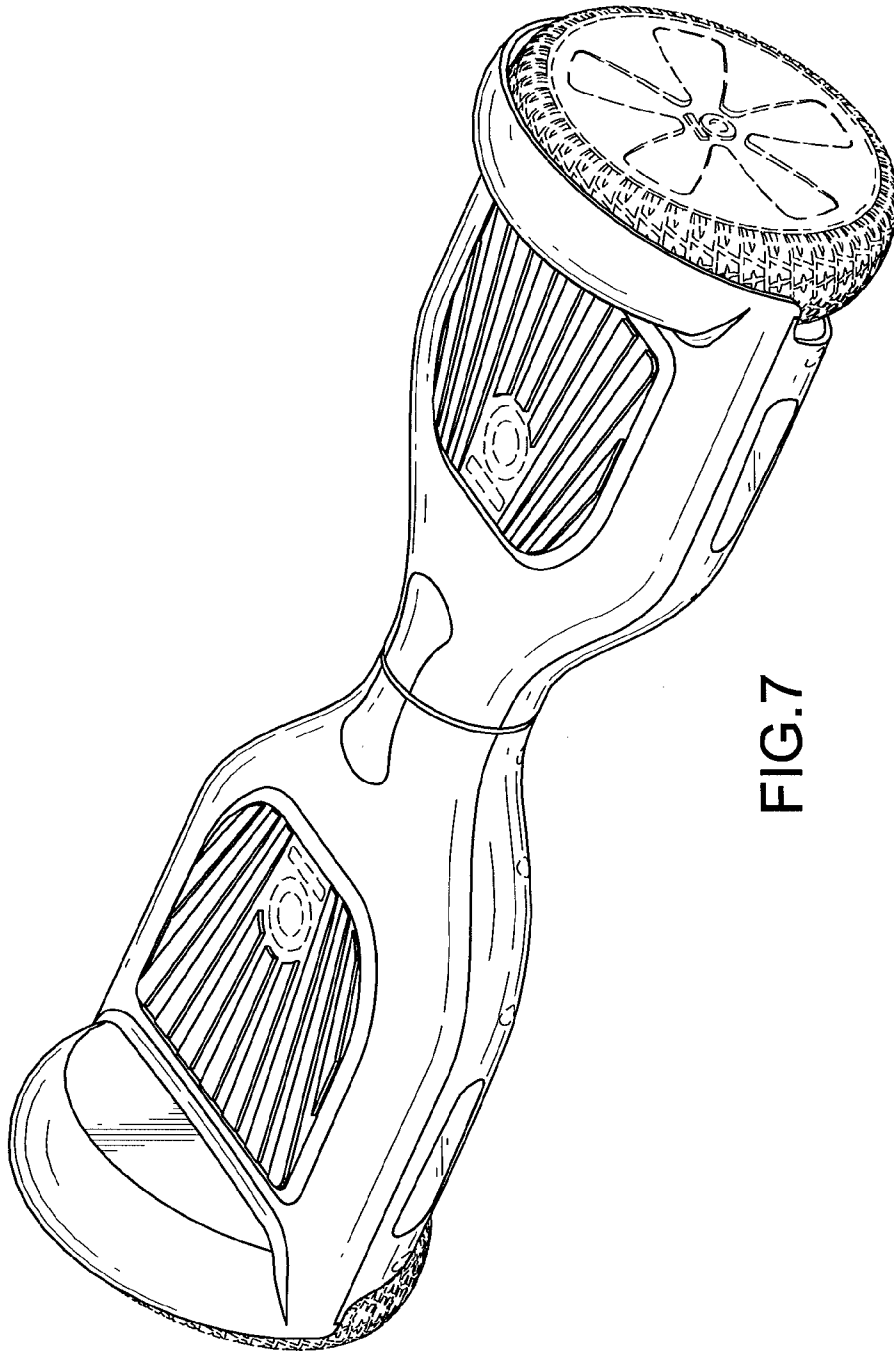


**U.S. Patent**

Sep. 8, 2015

Sheet 7 of 8

**US D738,256 S**



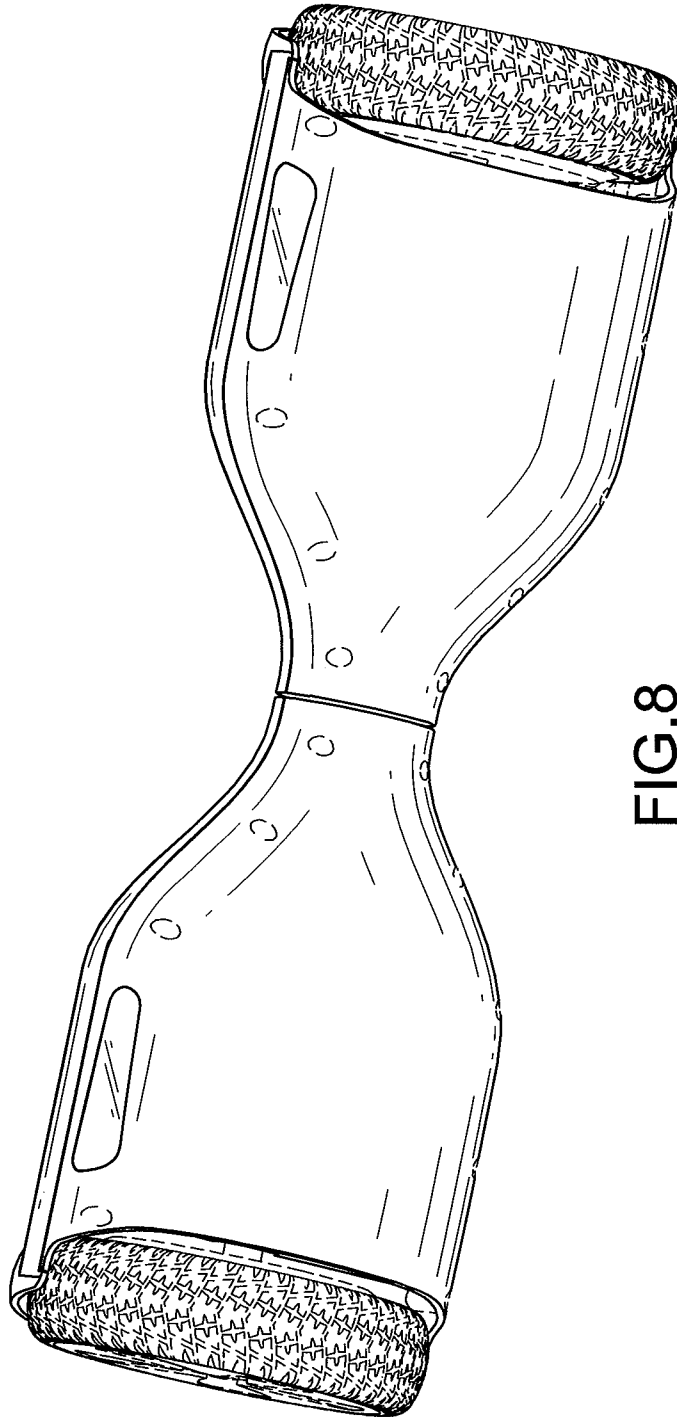
**FIG. 7**

**U.S. Patent**

**Sep. 8, 2015**

**Sheet 8 of 8**

**US D738,256 S**



**FIG.8**

# EXHIBIT 5



US00D784195S

(12) **United States Design Patent**  
**Ying**

(10) **Patent No.:** **US D784,195 S**

(45) **Date of Patent:** **\*\* Apr. 18, 2017**

(54) **HUMAN MACHINE INTERACTION  
VEHICLE**

(71) Applicant: **Hangzhou Chic Intelligent Technology  
Co., Ltd.**, Yuhang Dist., Hangzhou,  
Zhejiang (CN)

(72) Inventor: **Jiawei Ying**, Hangzhou (CN)

(73) Assignee: **Hangzhou Chic Intelligent Technology  
Co., Ltd.**, Hangzhou, Zhejiang Province  
(CN)

(\*\*) Term: **15 Years**

(21) Appl. No.: **29/556,275**

(22) Filed: **Feb. 29, 2016**

(30) **Foreign Application Priority Data**

Oct. 9, 2015 (CN) ..... 2015 3 0389352

(51) **LOC (10) Cl.** ..... **12-14**

(52) **U.S. Cl.**  
USPC ..... **D12/1**

(58) **Field of Classification Search**

USPC ..... D12/1, 5; D21/419, 421, 423, 426, 662,  
D21/760, 765, 766, 769, 771, 776, 803;  
701/124; 280/87.042, 87.021, 87.041,  
280/5.23, 5.39, 205, 209, 229, 266, 282,  
280/851; 180/181, 5.26, 6.5, 7.1, 8.2,  
180/65.8, 907, 218, 65, 13  
CPC .... B62K 3/007; B62K 17/00; B62K 2202/00;  
B62D 51/001; B62D 51/02; B62D 61/00;  
A63C 17/0033; A63C 17/01; A63C  
17/016; A63C 2203/40; A63C 17/12

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

8,738,278 B2 \* 5/2014 Chen ..... B62K 11/007  
180/218

D737,723 S 9/2015 Ying et al.

D738,256 S 9/2015 Ying et al.  
D739,906 S \* 9/2015 Chen ..... D21/760  
9,376,155 B2 \* 6/2016 Ying ..... B62K 3/007  
9,403,573 B1 \* 8/2016 Mazzei ..... B62D 51/02  
2002/0008361 A1 \* 1/2002 Smith ..... A63C 5/031  
280/14.21  
2005/0242538 A1 \* 11/2005 Hiramatsu ..... A63C 17/004  
280/92  
2013/0238231 A1 \* 9/2013 Chen ..... B62K 11/007  
701/124

(Continued)

**FOREIGN PATENT DOCUMENTS**

CN 302534790 S 8/2013

*Primary Examiner* — T. Chase Nelson

*Assistant Examiner* — Ania Aman

(74) *Attorney, Agent, or Firm* — Muncy, Geissler, Olds &  
Lowe, P.C.

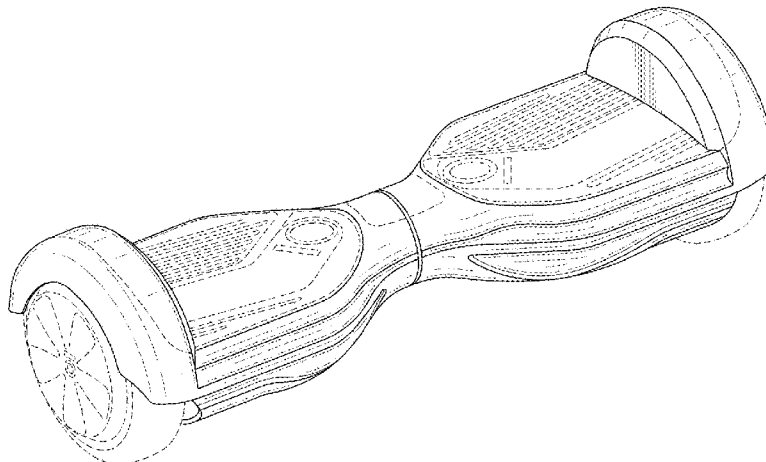
(57) **CLAIM**

The ornamental design for a human-machine interaction  
vehicle, as shown and described.

**DESCRIPTION**

FIG. 1 is a top plan view of a human-machine interaction  
vehicle showing my new design;  
FIG. 2 is a bottom plan view thereof;  
FIG. 3 is a front elevational view thereof;  
FIG. 4 is a rear elevational view thereof;  
FIG. 5 is a right side view thereof, the left side view being  
a mirror image thereof; and,  
FIG. 6 is a top, rear, right perspective view thereof.  
The broken lines are for the purpose of illustrating portions  
of the human-machine interaction vehicle and environmen-  
tal structure which form no part of the claimed design.

**1 Claim, 6 Drawing Sheets**



**US D784,195 S**

Page 2

---

(56)

**References Cited**

U.S. PATENT DOCUMENTS

2016/0129963 A1 \* 5/2016 Ying ..... B62K 3/007  
180/6.5

2016/0325803 A1 \* 11/2016 Waxman ..... B62M 7/12

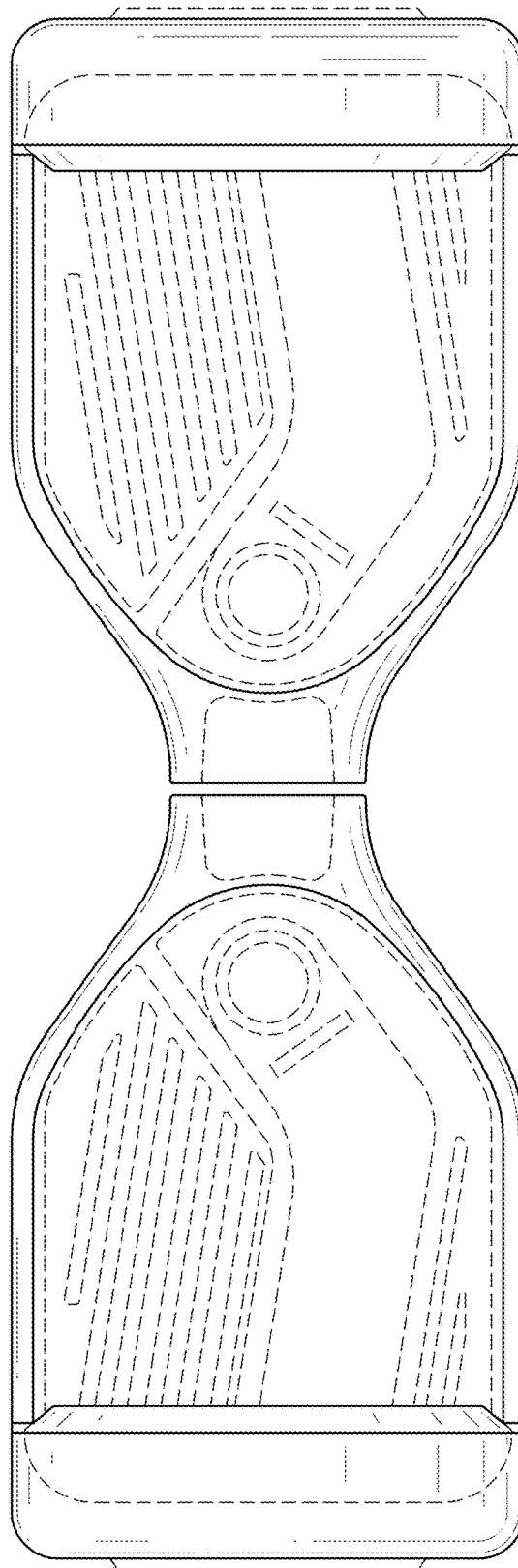
\* cited by examiner

**U.S. Patent**

**Apr. 18, 2017**

**Sheet 1 of 6**

**US D784,195 S**



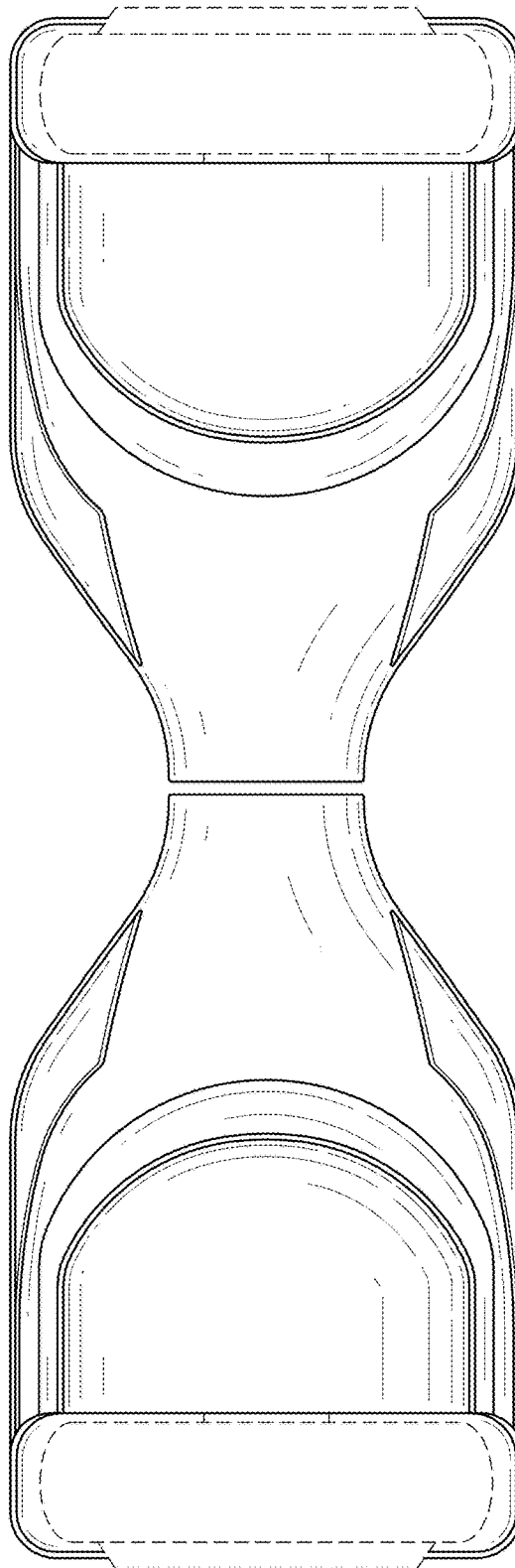
**FIG.1**

**U.S. Patent**

**Apr. 18, 2017**

**Sheet 2 of 6**

**US D784,195 S**



**FIG.2**

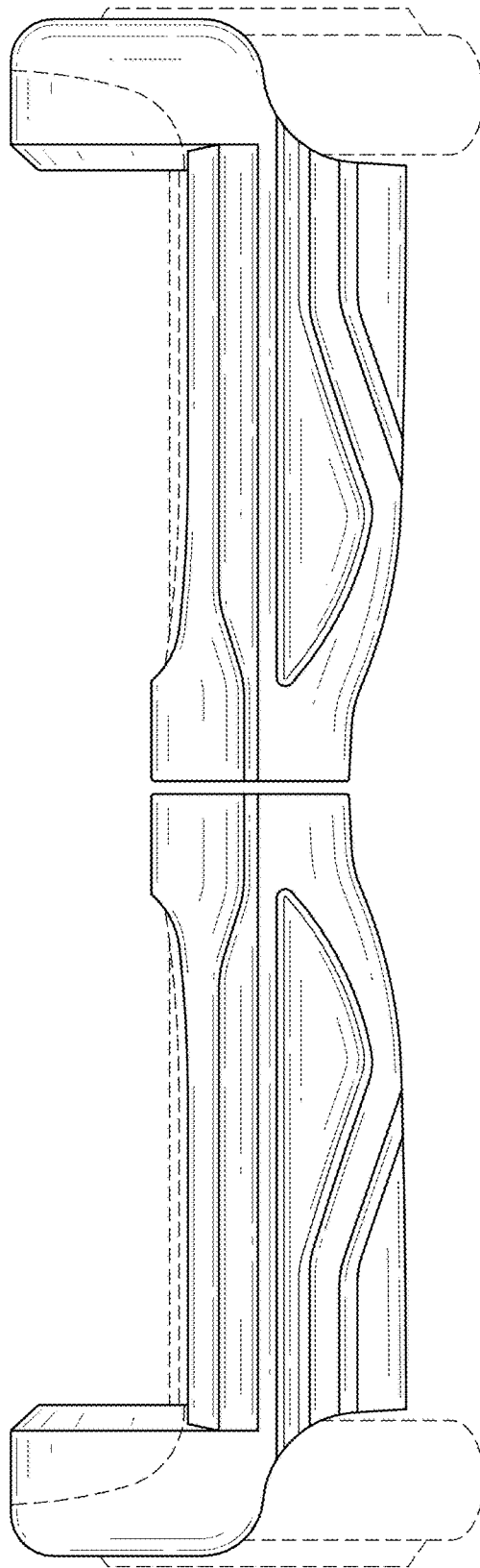


**U.S. Patent**

**Apr. 18, 2017**

**Sheet 3 of 6**

**US D784,195 S**



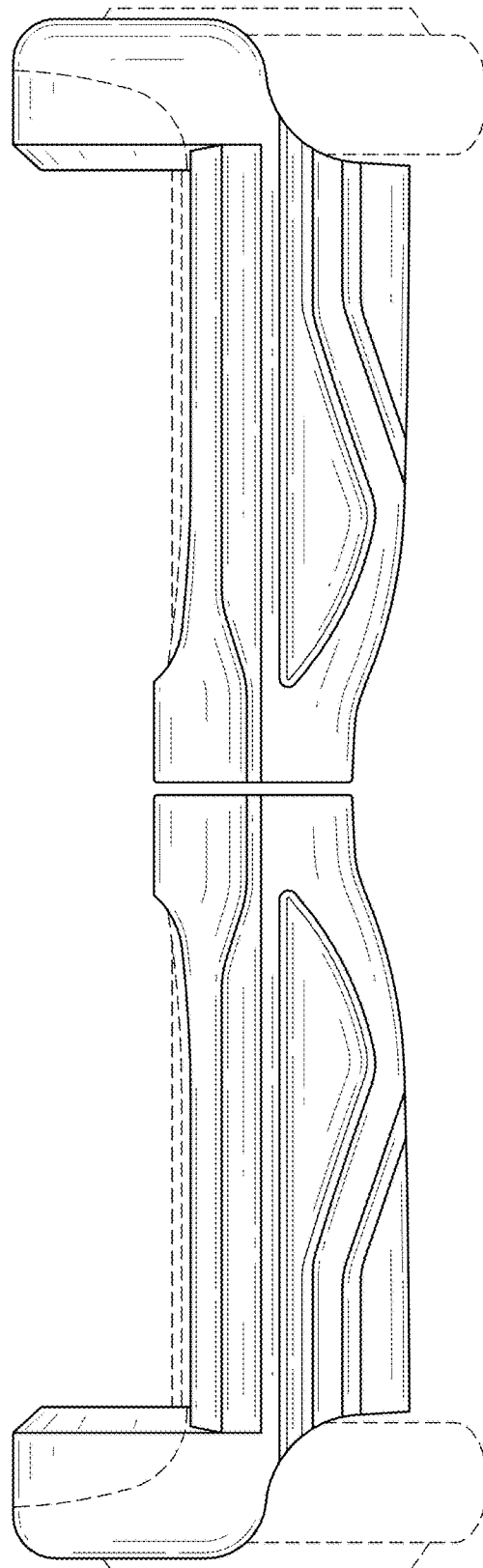
**FIG.3**

**U.S. Patent**

**Apr. 18, 2017**

**Sheet 4 of 6**

**US D784,195 S**



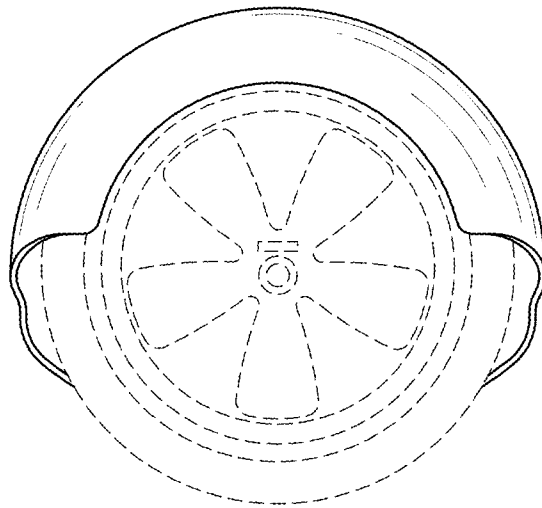
**FIG.4**

**U.S. Patent**

**Apr. 18, 2017**

**Sheet 5 of 6**

**US D784,195 S**



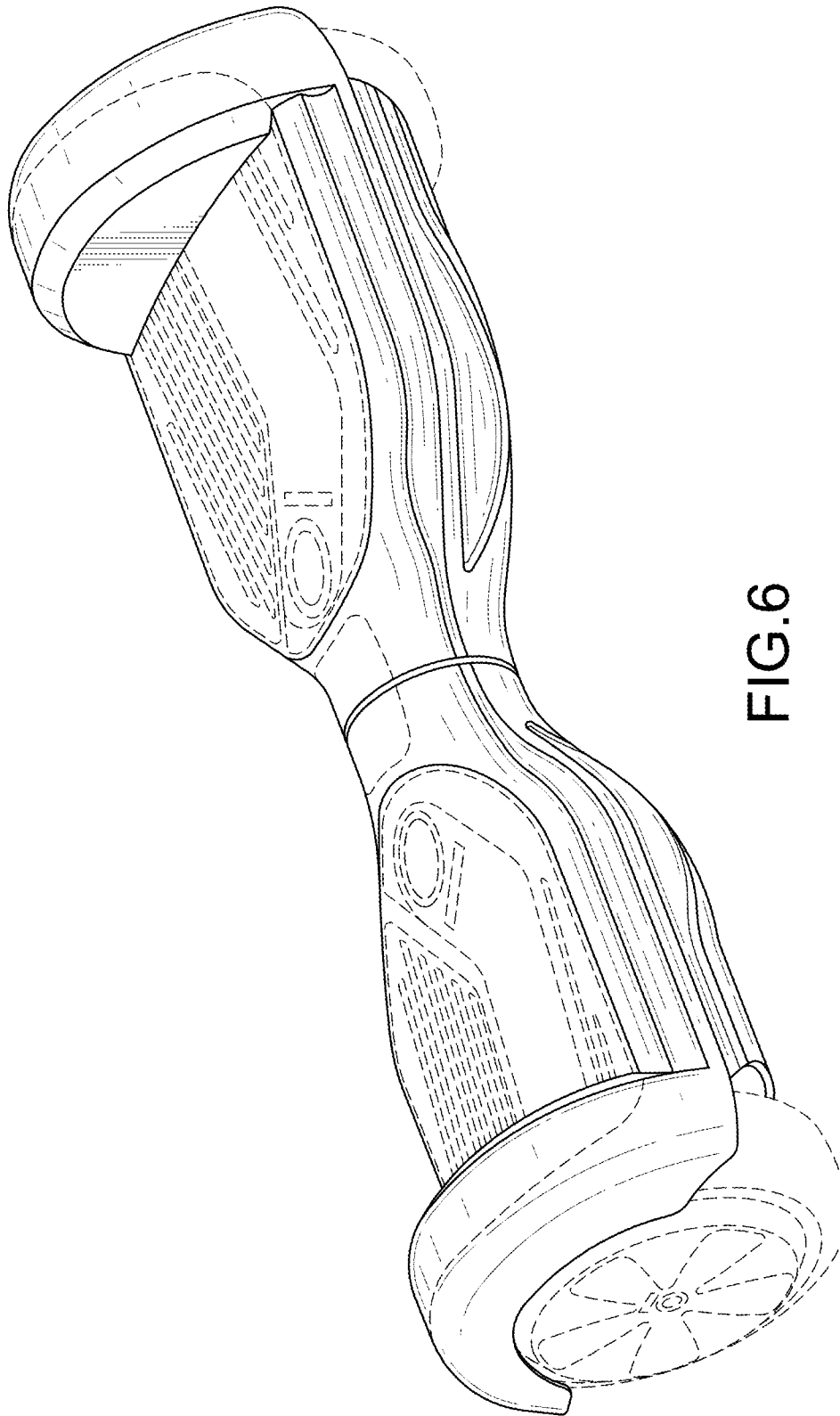
**FIG.5**

**U.S. Patent**

**Apr. 18, 2017**

**Sheet 6 of 6**

**US D784,195 S**



**FIG. 6**

# EXHIBIT 6



US00D785112S

(12) **United States Design Patent** (10) **Patent No.:** **US D785,112 S**  
**Ying** (45) **Date of Patent:** **\*\* Apr. 25, 2017**

(54) **HUMAN-MACHINE INTERACTION VEHICLE** 8,738,278 B2 \* 5/2014 Chen ..... B62K 3/007  
 180/218  
 D737,723 S \* 9/2015 Ying ..... D12/1  
 D738,256 S \* 9/2015 Ying ..... D12/1  
 D739,906 S \* 9/2015 Chen ..... D21/760  
 9,376,155 B2 \* 6/2016 Ying ..... B62K 3/007  
 9,403,573 B1 \* 8/2016 Mazzei ..... B62D 51/02  
 9,499,228 B2 \* 11/2016 Chang ..... B62K 3/002  
 2007/0131461 A1 \* 6/2007 Treadwell ..... B62B 5/005  
 180/19.1  
 2013/0238231 A1 \* 9/2013 Chen ..... B62K 11/007  
 701/124  
 2015/0096820 A1 \* 4/2015 Strack ..... G11C 7/1072  
 180/181

(71) Applicant: **Hangzhou Chic Intelligent Technology Co., Ltd.**, Yuhang Dist, Hangzhou, Zhejiang (CN)

(72) Inventor: **Jiawei Ying**, Hangzhou (CN)

(73) Assignee: **Hangzhou Chic Intelligent Technology Co., Ltd.**, Hangzhou, Zhejiang Province (CN)

(\*\*) Term: **15 Years**

## FOREIGN PATENT DOCUMENTS

(21) Appl. No.: **29/556,300** CN 302534790 S 8/2013

(22) Filed: **Feb. 29, 2016** \* cited by examiner

(30) **Foreign Application Priority Data**

Nov. 26, 2015 (CN) ..... 2015 3 0481979

(51) **LOC (10) Cl.** ..... **21-02**

(52) **U.S. Cl.** ..... **D21/760**

(58) **Field of Classification Search**

USPC ..... D21/419, 421, 423, 426, 760, 765, 766, D21/769, 771, 776, 803; D12/1  
 CPC ..... A63C 17/01; A63C 17/12; A63C 2203/00; A63C 2203/011; A63C 2203/012; A63C 2203/013; A63C 2203/40; A63C 2203/52; B62D 51/02; B62K 2202/00; B62K 2207/00; B62K 2207/02; B62K 2207/04  
 See application file for complete search history.

(56) **References Cited****U.S. PATENT DOCUMENTS**

D535,714 S \* 1/2007 Cheng ..... D21/763  
 7,481,291 B2 \* 1/2009 Nishikawa ..... B62K 17/00  
 180/181  
 D601,922 S \* 10/2009 Imai ..... D12/1

*Primary Examiner* — Cynthia M Chin  
 (74) *Attorney, Agent, or Firm* — Muncy, Geissler, Olds & Lowe, P.C.

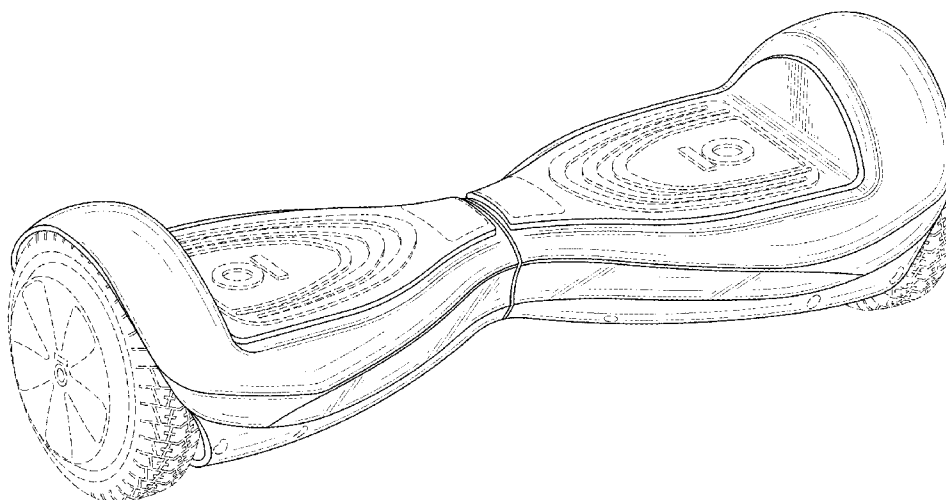
(57) **CLAIM**

The ornamental design for a human-machine interaction vehicle, as shown and described.

**DESCRIPTION**

FIG. 1 is a top plan view of a human-machine interaction vehicle showing my new design;  
 FIG. 2 is a bottom plan view thereof;  
 FIG. 3 is a front elevational view thereof;  
 FIG. 4 is a rear elevational view thereof;  
 FIG. 5 is a right side view thereof, the left side view being a mirror image thereof; and,  
 FIG. 6 is a top, front, left perspective view thereof.  
 The broken lines are for the purpose of illustrating portions of the human-machine interaction vehicle and environmental structure which form no part of the claimed design.

**1 Claim, 6 Drawing Sheets**

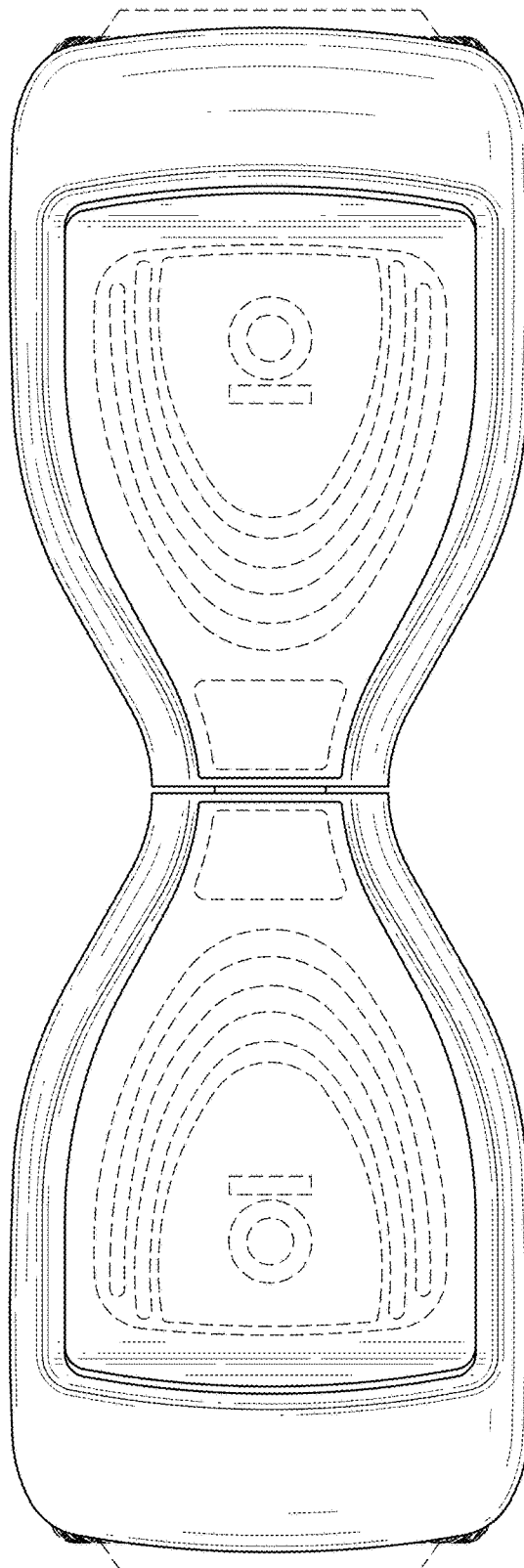


**U.S. Patent**

**Apr. 25, 2017**

**Sheet 1 of 6**

**US D785,112 S**



**FIG.1**

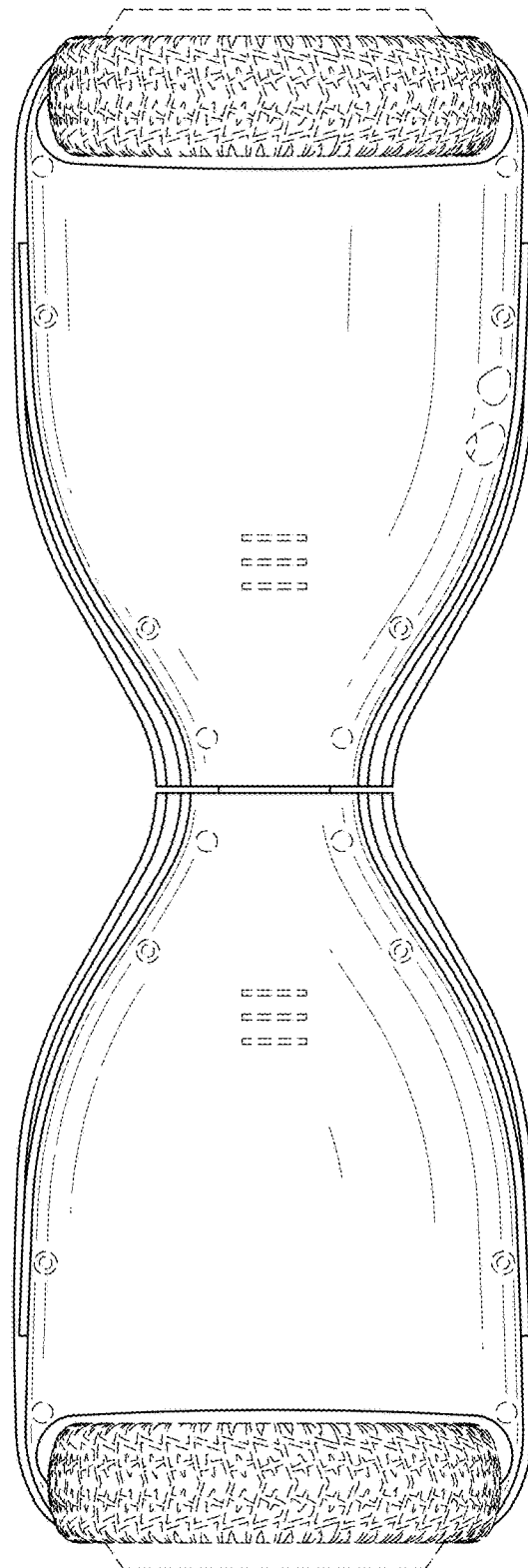


**U.S. Patent**

**Apr. 25, 2017**

**Sheet 2 of 6**

**US D785,112 S**



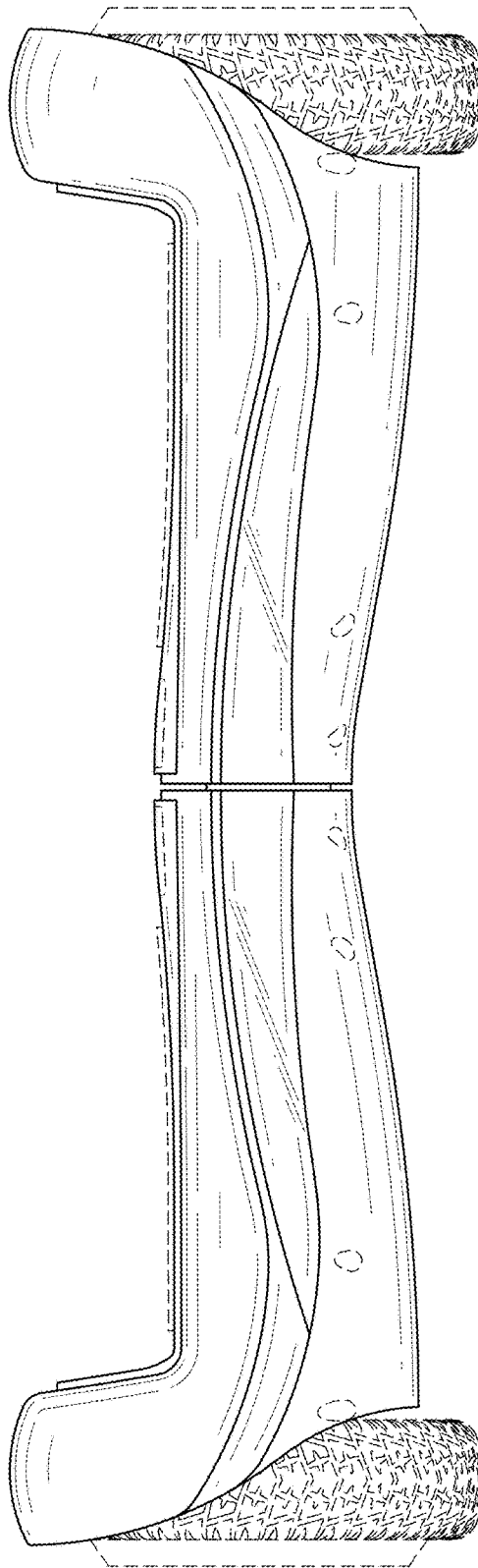
**FIG.2**

**U.S. Patent**

**Apr. 25, 2017**

**Sheet 3 of 6**

**US D785,112 S**



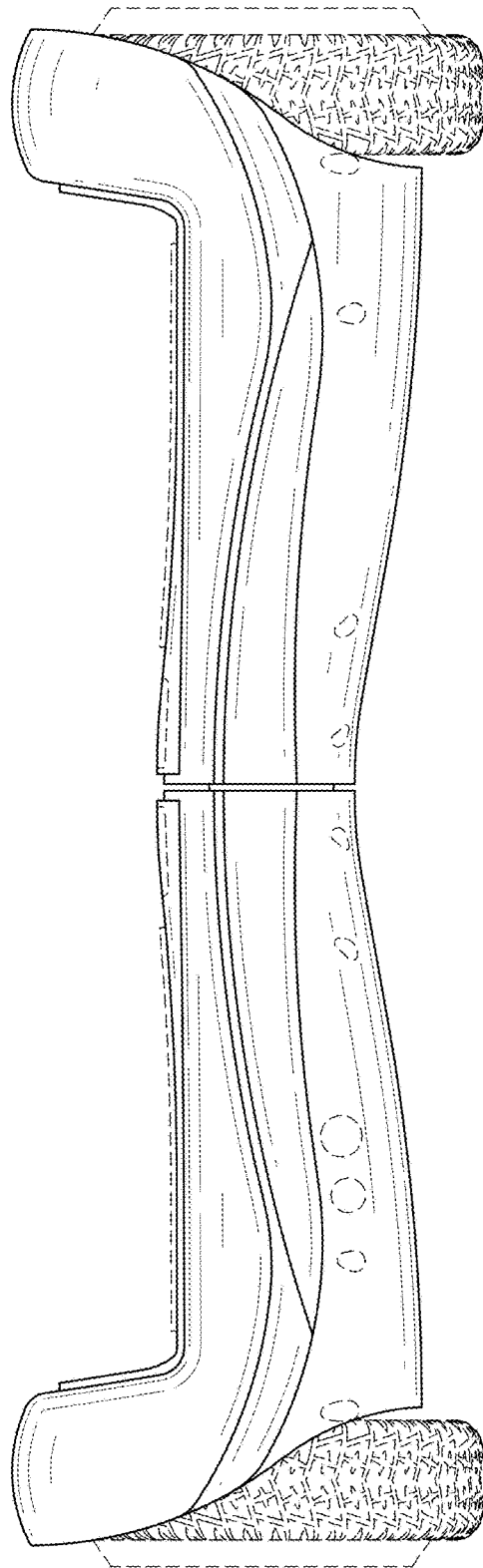
**FIG.3**

**U.S. Patent**

**Apr. 25, 2017**

**Sheet 4 of 6**

**US D785,112 S**



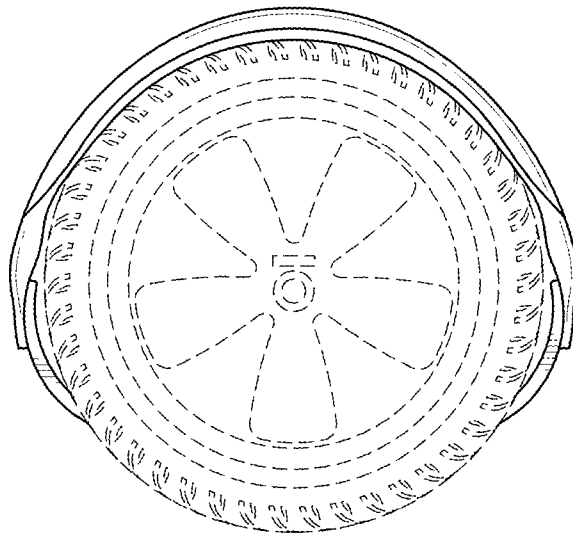
**FIG.4**

**U.S. Patent**

**Apr. 25, 2017**

**Sheet 5 of 6**

**US D785,112 S**



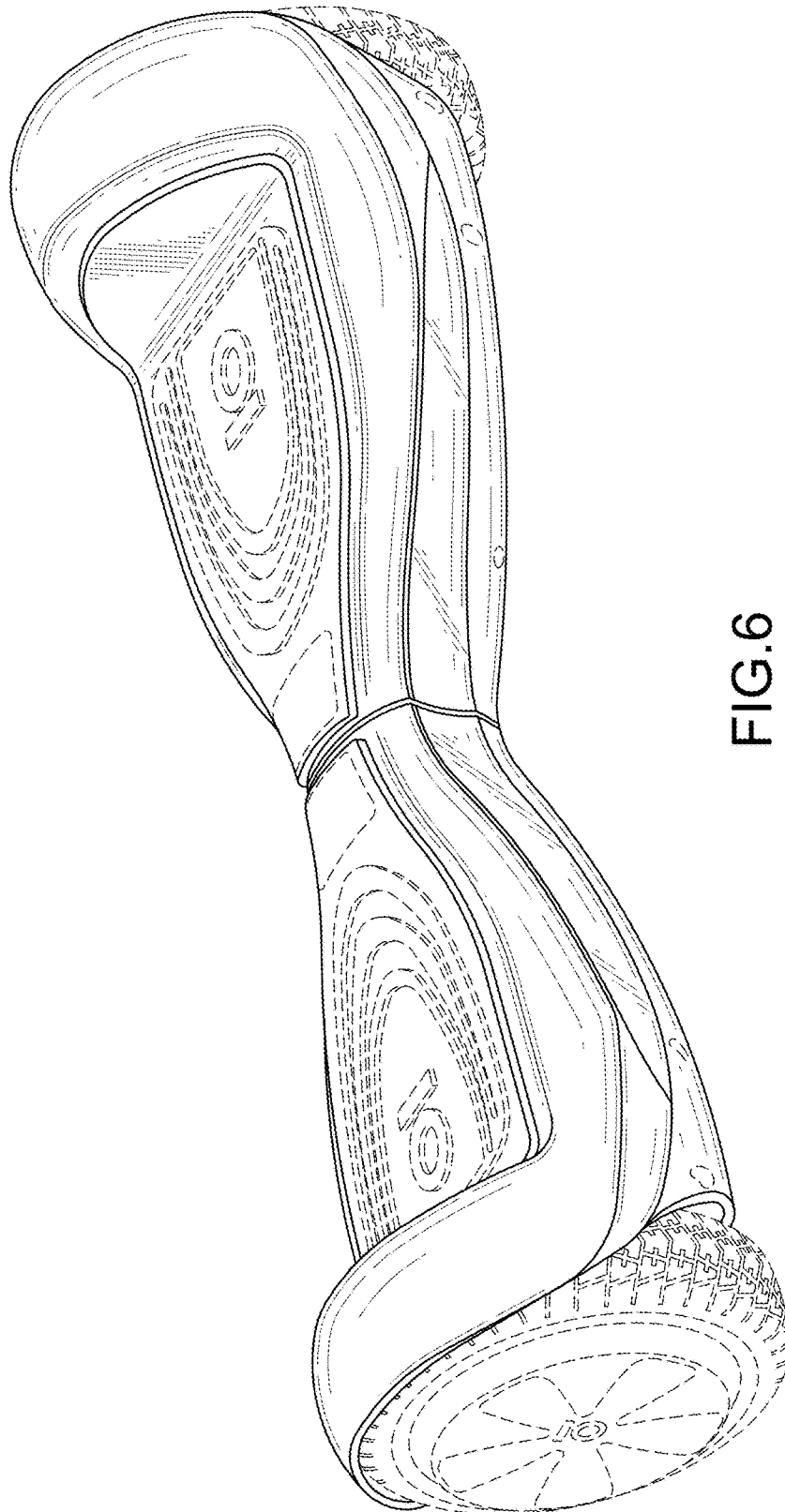
**FIG.5**

**U.S. Patent**

**Apr. 25, 2017**

**Sheet 6 of 6**

**US D785,112 S**



**FIG. 6**

# EXHIBIT 7



US00D808857S

(12) **United States Design Patent**  
**Zhang et al.**

(10) **Patent No.:** **US D808,857 S**  
 (45) **Date of Patent:** **\*\* Jan. 30, 2018**

(54) **HOVERBOARD**

(71) Applicant: **Shenzhen Chitado Technology CO., LTD.**, Shenzhen, Guangdong (CN)

(72) Inventors: **Dianxuan Zhang**, Guangdong (CN);  
**Dengjin Zhou**, Guangdong (CN)

(73) Assignee: **Shenzhen Chitado technology CO., LTD.** (CN)

(\*\*) Term: **15 Years**

(21) Appl. No.: **29/590,451**

(22) Filed: **Jan. 10, 2017**

(51) **LOC (11) Cl.** ..... **12-14**

(52) **U.S. Cl.**  
 USPC ..... **D12/1**

(58) **Field of Classification Search**

USPC ..... D12/1, 5; D21/419, 421, 423, 426, 662,  
 D21/760, 765, 766, 769, 771, 776, 803  
 CPC .... B62K 3/007; B62K 17/00; B62K 2202/00;  
 B62K 11/007; B62D 51/001; B62D  
 51/02; B62D 61/00; B62D 37/00; A63C  
 17/0033; A63C 17/01; A63C 17/016;  
 A63C 2203/40; A63C 17/12; A63C  
 17/08; B60N 2/002; B60G 17/019  
 See application file for complete search history.

(56) **References Cited**

#### U.S. PATENT DOCUMENTS

D737,723 S \* 9/2015 Ying ..... D12/1  
 D738,256 S \* 9/2015 Ying ..... D12/1  
 D778,782 S \* 2/2017 Chen ..... D12/1

D780,626 S \* 3/2017 Li ..... D12/1  
 D784,195 S \* 4/2017 Ying ..... D12/1  
 D784,198 S \* 4/2017 Zhu ..... D12/1  
 D785,112 S \* 4/2017 Ying ..... D21/760  
 D785,113 S \* 4/2017 Ying ..... D21/760  
 D785,736 S \* 5/2017 Ying ..... D21/760  
 D786,130 S \* 5/2017 Huang ..... D12/1  
 D786,994 S \* 5/2017 Chen ..... D21/760  
 D786,995 S \* 5/2017 Ying ..... D21/760  
 9,688,340 B1 \* 6/2017 Kroymann ..... B62K 13/04  
 2013/0238231 A1 \* 9/2013 Chen ..... B62K 11/007  
 701/124  
 2016/0129963 A1 \* 5/2016 Ying ..... B62D 51/001  
 180/6.5  
 2016/0325803 A1 \* 11/2016 Waxman ..... B62M 7/12  
 2017/0144718 A1 \* 5/2017 Tinaphong ..... B62K 11/007  
 2017/0240240 A1 \* 8/2017 Kroymann ..... B62K 13/04

\* cited by examiner

*Primary Examiner* — T. Chase Nelson

*Assistant Examiner* — Ania Aman

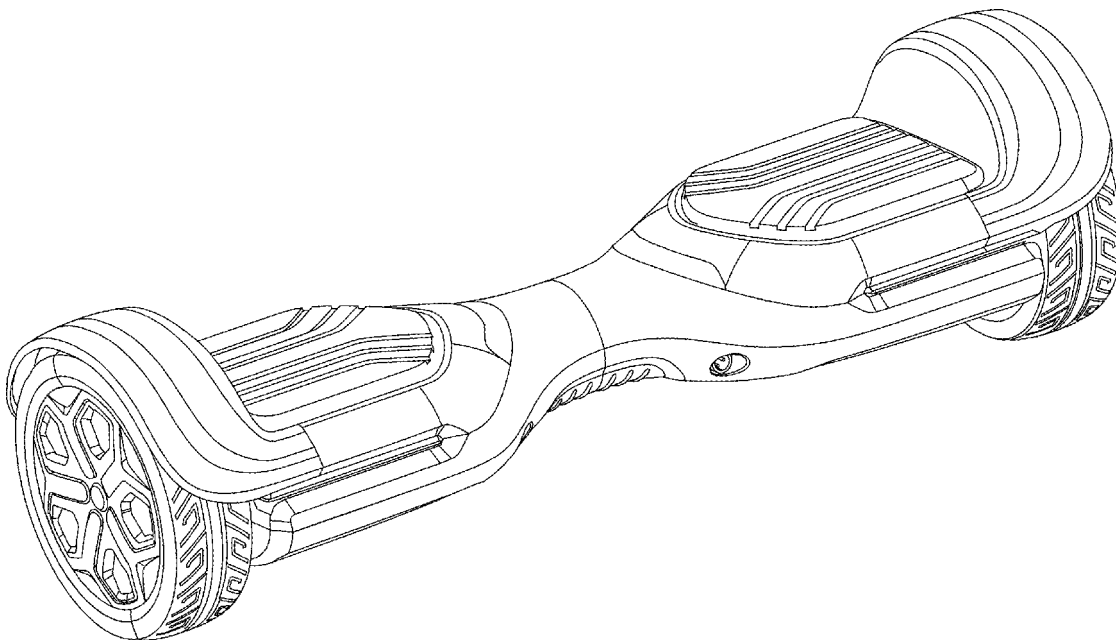
(57) **CLAIM**

The ornamental design for a hoverboard, as shown and described.

#### DESCRIPTION

FIG. 1 is a front view of the hoverboard showing our new design;  
 FIG. 2 is a back view thereof;  
 FIG. 3 is a top view thereof;  
 FIG. 4 is a bottom view thereof;  
 FIG. 5 is a left side view thereof;  
 FIG. 6 is a right side view thereof;  
 FIG. 7 is a perspective view thereof; and,  
 FIG. 8 is another perspective view thereof.

**1 Claim, 8 Drawing Sheets**



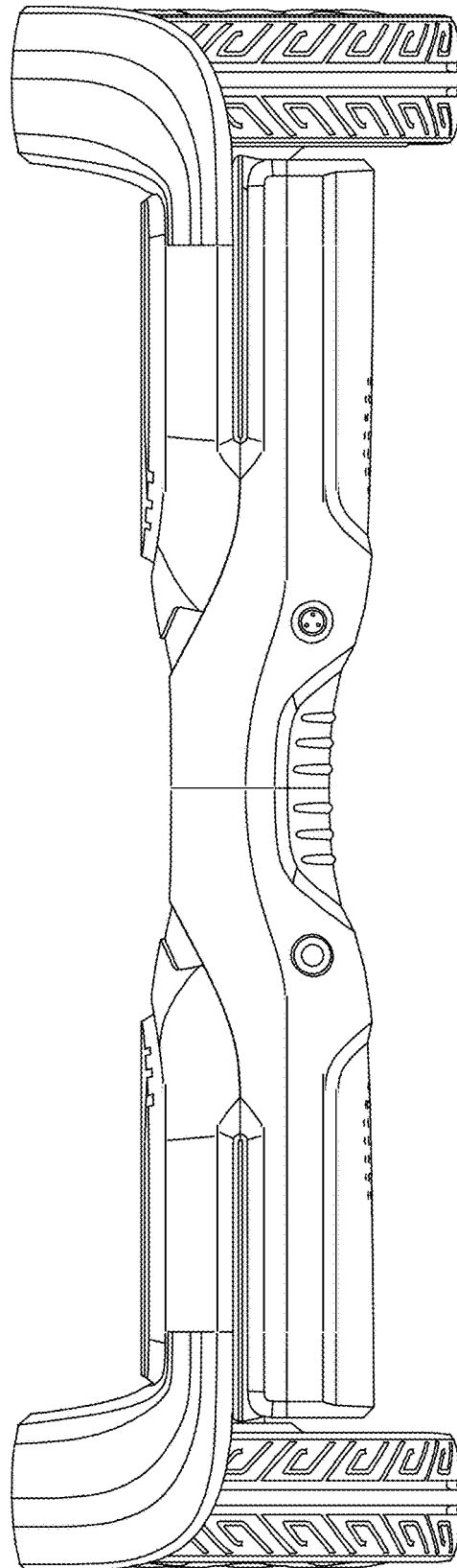


**U.S. Patent**

**Jan. 30, 2018**

**Sheet 1 of 8**

**US D808,857 S**



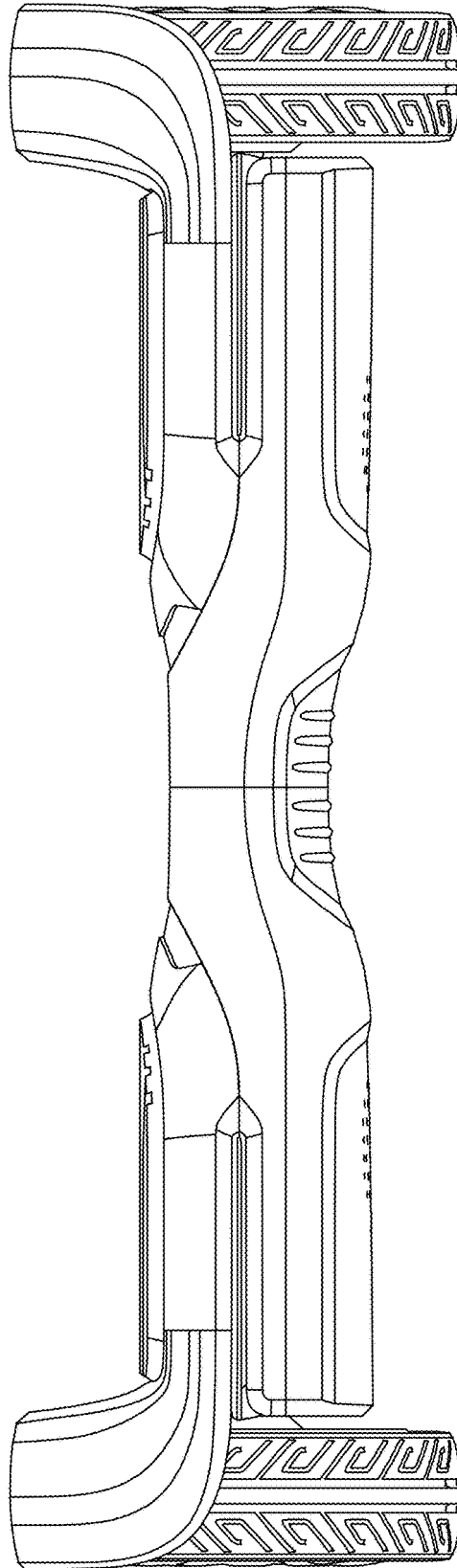
**FIG. 1**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 2 of 8**

**US D808,857 S**



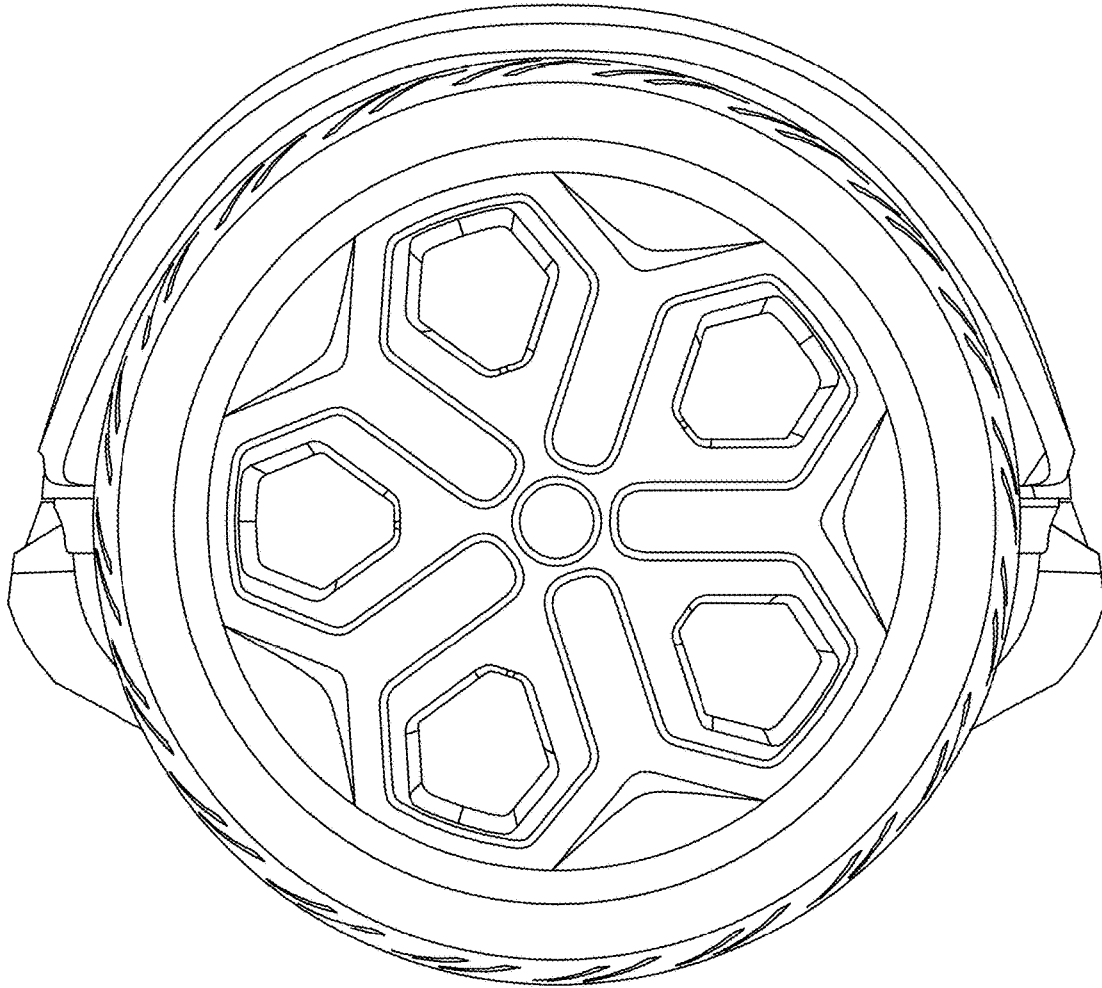
**FIG. 2**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 3 of 8**

**US D808,857 S**



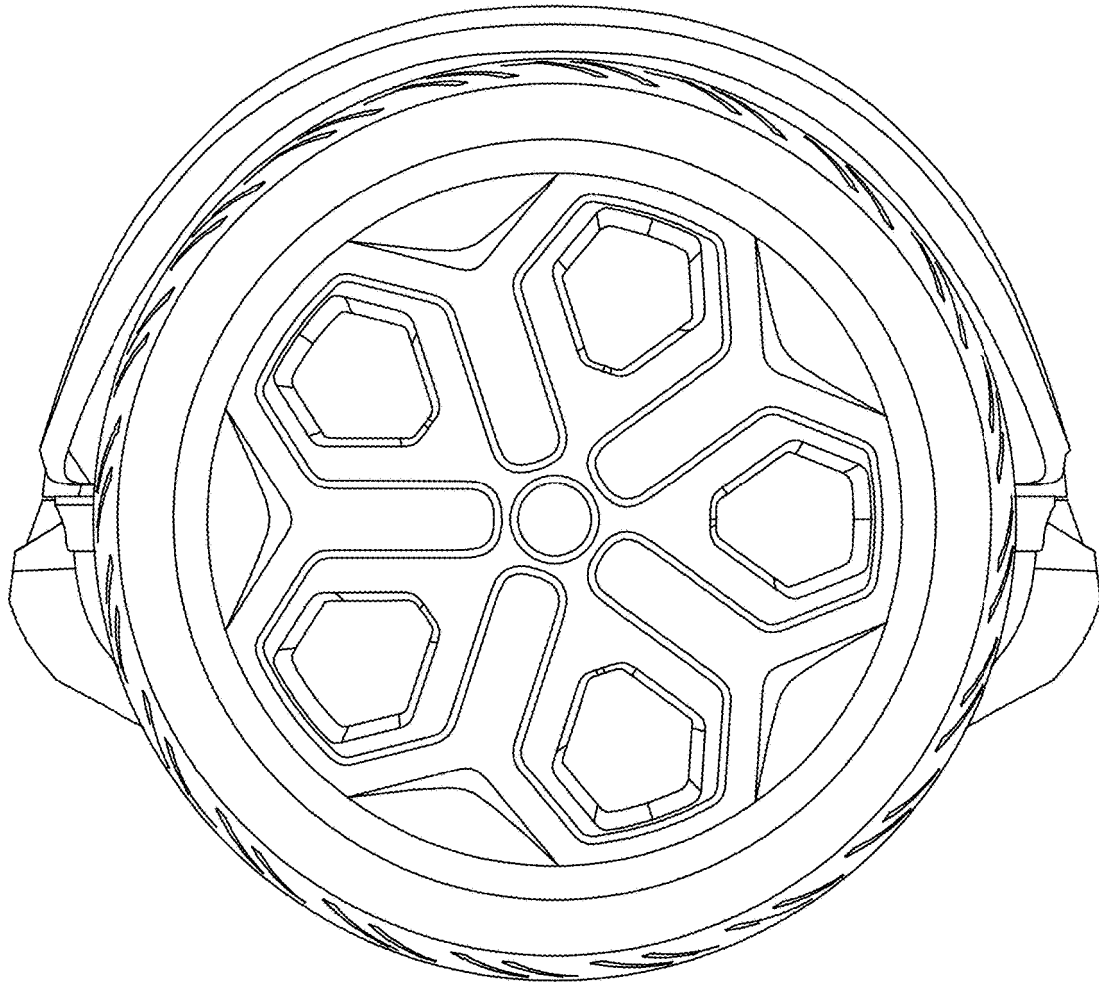
**FIG. 3**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 4 of 8**

**US D808,857 S**



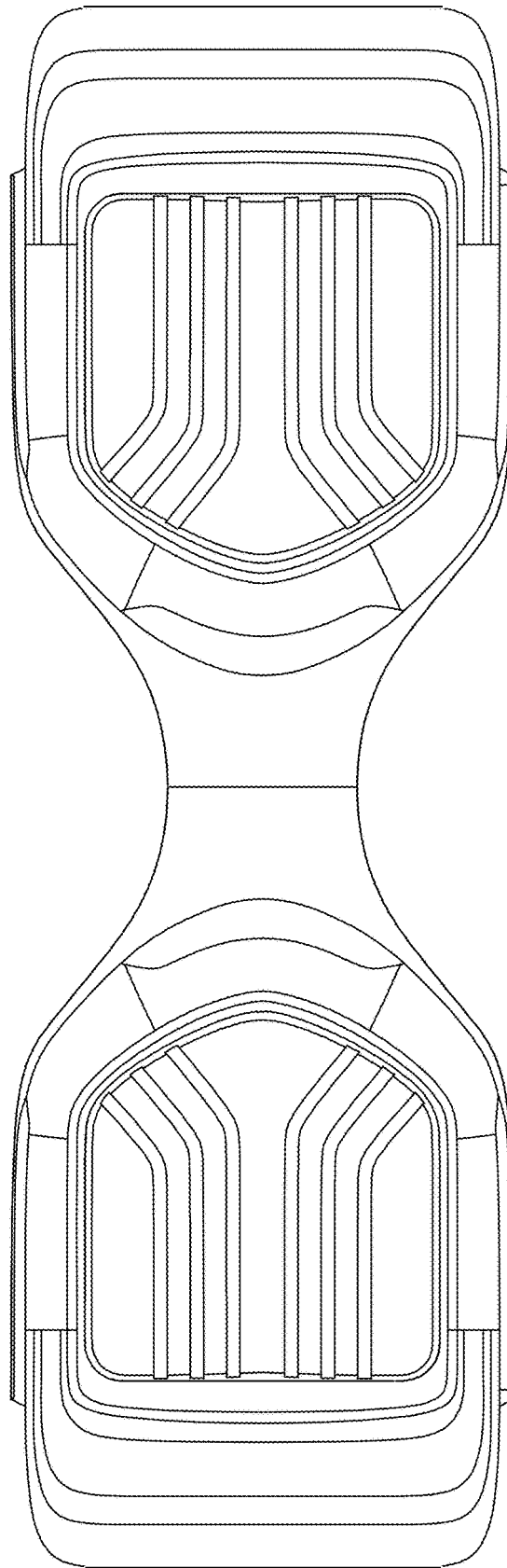
**FIG. 4**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 5 of 8**

**US D808,857 S**



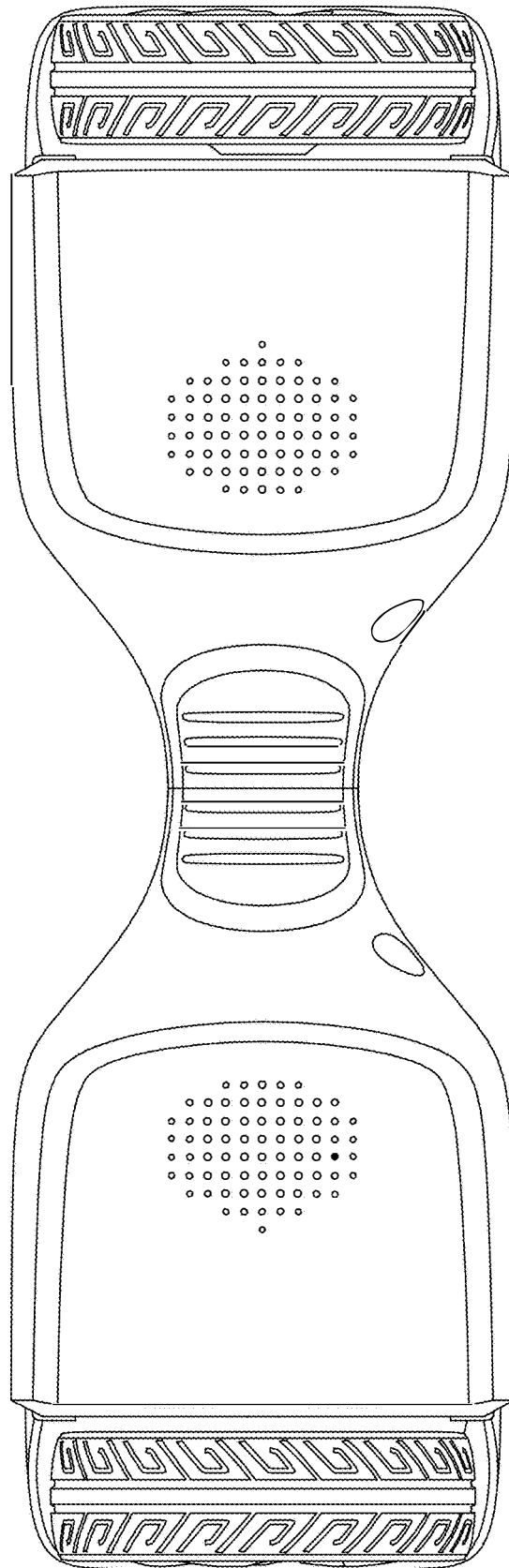
**FIG. 5**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 6 of 8**

**US D808,857 S**



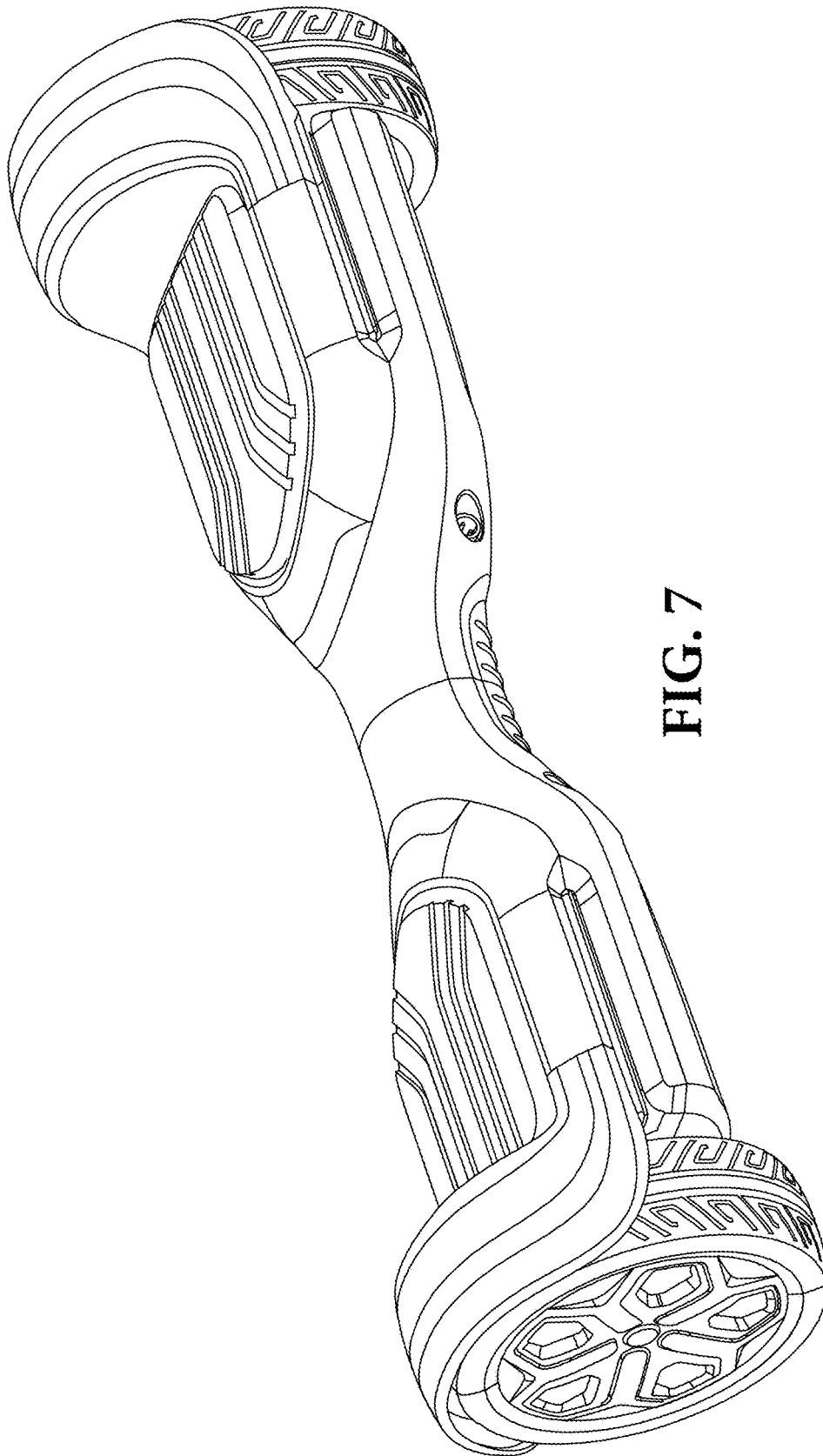
**FIG. 6**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 7 of 8**

**US D808,857 S**



**FIG. 7**

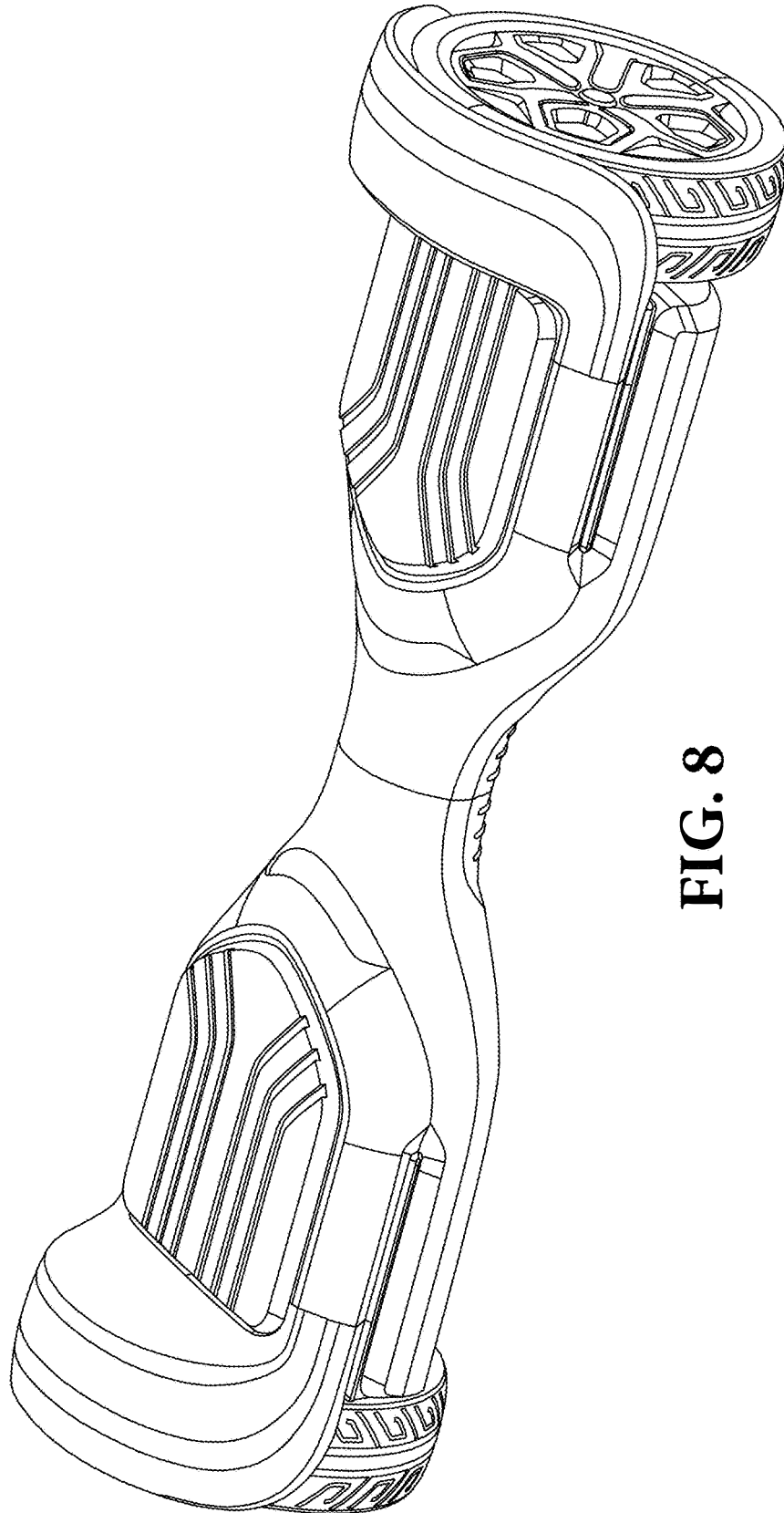


**U.S. Patent**

**Jan. 30, 2018**

**Sheet 8 of 8**

**US D808,857 S**



**FIG. 8**

# EXHIBIT 8



US00D739906S

(12) **United States Design Patent**  
**Chen**

(10) **Patent No.:** **US D739,906 S**

(45) **Date of Patent:** **\*\* Sep. 29, 2015**

(54) **TWO-WHEELED VEHICLE**

(71) Applicant: **Shane Chen**, Camas, WA (US)

(72) Inventor: **Shane Chen**, Camas, WA (US)

(\*\*) Term: **14 Years**

(21) Appl. No.: **29/448,472**

(22) Filed: **Mar. 12, 2013**

(51) **LOC (10) Cl.** ..... **21-02**

(52) **U.S. Cl.**  
USPC ..... **D21/760**

(58) **Field of Classification Search**

USPC ..... D21/419, 421, 423, 426, 760, 765, 766,  
D21/769, 771, 776, 803; D12/1; 280/7.14,  
280/11.14, 11.16, 11.19, 11.115, 11.226,  
280/11.233, 11.25, 11.27, 11.28, 14.21,  
280/87.01, 87.021, 87.03, 87.041, 87.042,  
280/809, 811; 180/180, 181

See application file for complete search history.

(56) **References Cited**

#### U.S. PATENT DOCUMENTS

D437,377 S \* 2/2001 Fisher ..... D21/765  
D465,003 S \* 10/2002 Ohrvall et al. .... D21/763  
D535,714 S \* 1/2007 Cheng et al. .... D21/763

D552,201 S \* 10/2007 Kwak ..... D21/765  
D567,883 S \* 4/2008 Ota ..... D21/421  
D572,332 S \* 7/2008 Sramek et al. .... D21/765  
D607,525 S \* 1/2010 Marciano ..... D21/769

\* cited by examiner

*Primary Examiner* — Cynthia M Chin

#### (57) **CLAIM**

The ornamental design for a two-wheeled vehicle, as shown and described.

#### **DESCRIPTION**

FIG. 1 is a top view of the two-wheeled vehicle.

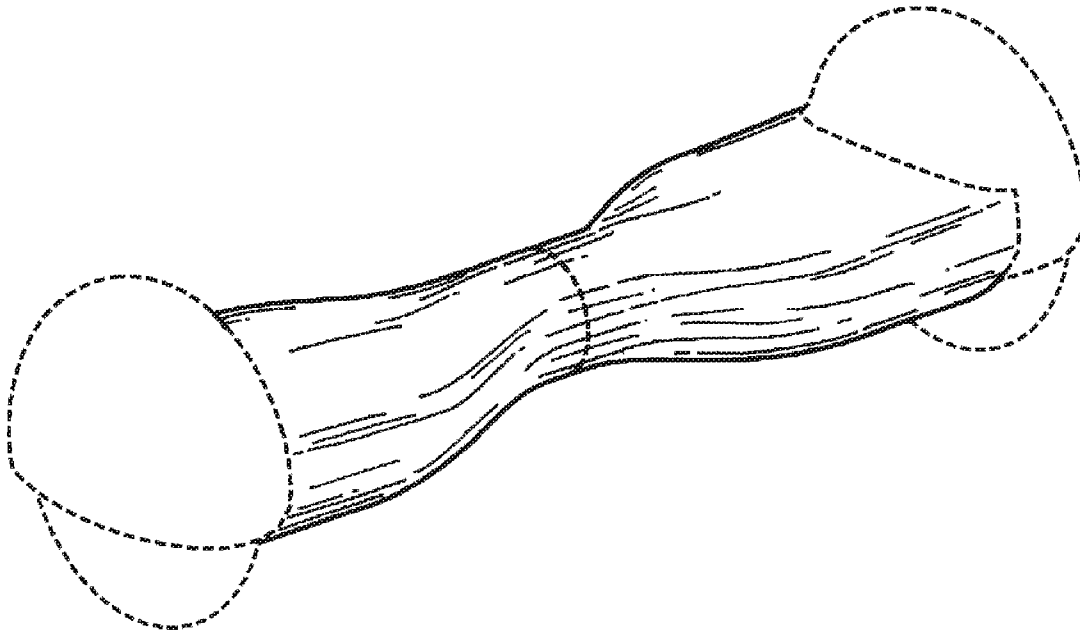
FIG. 2 is a front elevation view of the vehicle of FIG. 1; the rear elevation views being identical thereto.

FIG. 3 is a bottom view of the vehicle of FIG. 1.

FIG. 4 is a perspective view of the vehicle of FIG. 1; and, FIG. 5 is a side view of the vehicle of FIG. 1; the opposite side view being identical thereto.

The broken lines represent functional components which are provided for context and do not form a part of the claimed design. In FIGS. 1-4, the single broken line in the middle of the vehicle represents a joint whereby the right and left halves of the vehicle may twist relative to each other as part of the vehicle's function.

**1 Claim, 3 Drawing Sheets**



**U.S. Patent**

Sep. 29, 2015

Sheet 1 of 3

**US D739,906 S**

Fig. 1

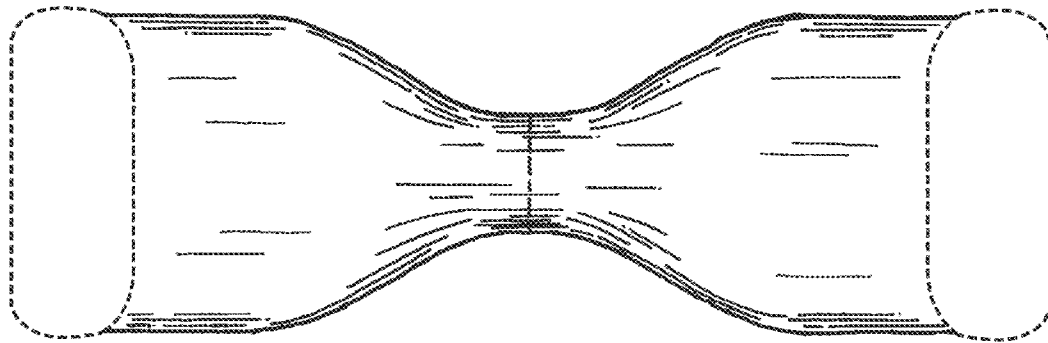
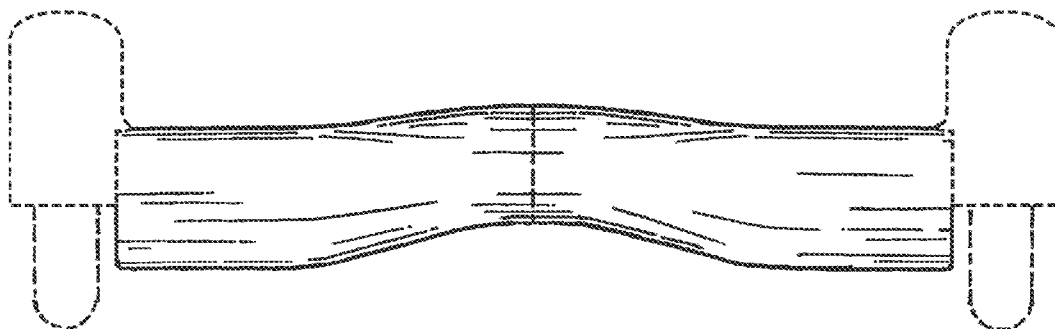


Fig. 2



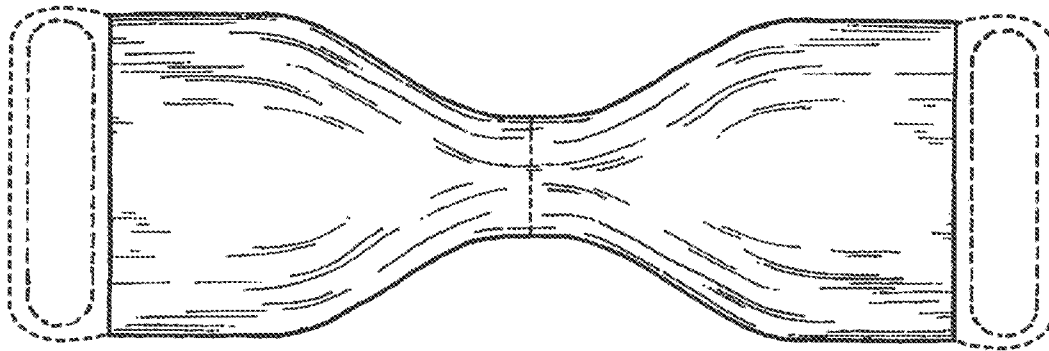
**U.S. Patent**

**Sep. 29, 2015**

**Sheet 2 of 3**

**US D739,906 S**

Fig. 3



**U.S. Patent**

Sep. 29, 2015

Sheet 3 of 3

**US D739,906 S**

Fig. 4

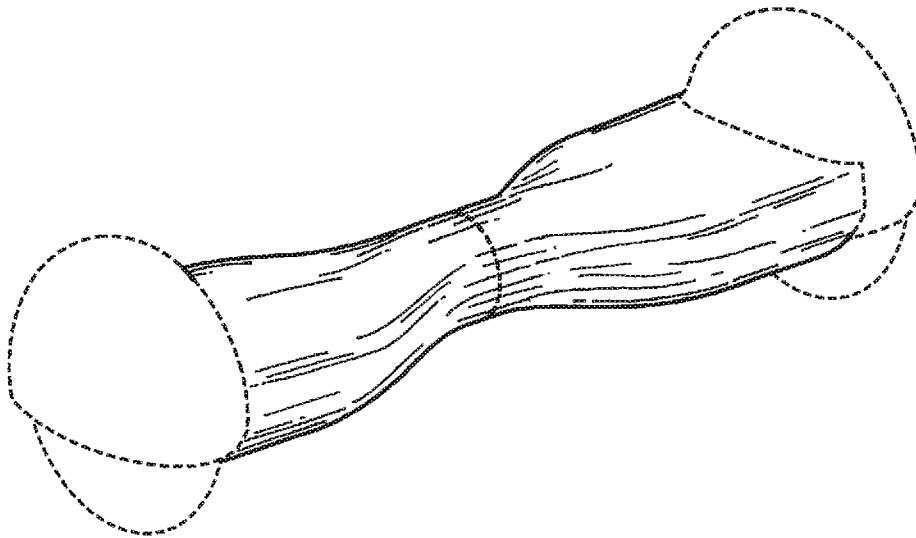
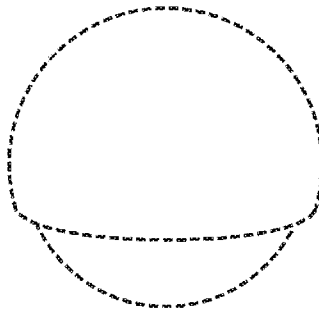


Fig. 5



# EXHIBIT 9





US00D808856S

(12) **United States Design Patent**  
**Zhang et al.**

(10) **Patent No.:** **US D808,856 S**

(45) **Date of Patent:** **\*\* Jan. 30, 2018**

(54) **HOVERBOARD**

(71) Applicant: **Shenzhen Chitado Technology CO., LTD.**, Shenzhen, Guangdong (CN)

(72) Inventors: **Dianxuan Zhang**, Guangdong (CN);  
**Dengjin Zhou**, Guangdong (CN)

(73) Assignee: **Shenzhen Chitado technology CO., LTD.** (CN)

(\*\*) Term: **15 Years**

(21) Appl. No.: **29/590,447**

(22) Filed: **Jan. 10, 2017**

(51) **LOC (11) Cl.** ..... **12-14**

(52) **U.S. Cl.**  
 USPC ..... **D12/1**

(58) **Field of Classification Search**

USPC ..... D12/1, 5; D21/419, 421, 423, 426, 662,  
 D21/760, 765, 766, 769, 771, 776, 803  
 CPC .... B62K 3/007; B62K 17/00; B62K 2202/00;  
 B62K 11/007; B62D 51/001; B62D  
 51/02; B62D 61/00; B62D 37/00; A63C  
 17/0033; A63C 17/01; A63C 17/016;  
 A63C 2203/40; A63C 17/12; A63C  
 17/08; B60N 2/002; B60G 17/019  
 See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D737,723 S \* 9/2015 Ying ..... D12/1  
 D738,256 S \* 9/2015 Ying ..... D12/1  
 D778,782 S \* 2/2017 Chen ..... D12/1

D780,626 S \* 3/2017 Li ..... D12/1  
 D784,195 S \* 4/2017 Ying ..... D12/1  
 D784,198 S \* 4/2017 Zhu ..... D12/1  
 D785,112 S \* 4/2017 Ying ..... D21/760  
 D785,113 S \* 4/2017 Ying ..... D21/760  
 D785,736 S \* 5/2017 Ying ..... D21/760  
 D786,130 S \* 5/2017 Huang ..... D12/1  
 D786,994 S \* 5/2017 Chen ..... D21/760  
 D786,995 S \* 5/2017 Ying ..... D21/760  
 9,688,340 B1 \* 6/2017 Kroymann ..... B62K 13/04  
 2013/0238231 A1 \* 9/2013 Chen ..... B62K 11/007  
 701/124  
 2016/0129963 A1 \* 5/2016 Ying ..... B62D 51/001  
 180/6.5  
 2016/0325803 A1 \* 11/2016 Waxman ..... B62M 7/12  
 2017/0144718 A1 \* 5/2017 Tinaphong ..... B62K 11/007  
 2017/0240240 A1 \* 8/2017 Kroymann ..... B62K 13/04

\* cited by examiner

*Primary Examiner* — T. Chase Nelson

*Assistant Examiner* — Ania Aman

(57) **CLAIM**

The ornamental design for a hoverboard, as shown and described.

**DESCRIPTION**

FIG. 1 is a front view of the hoverboard showing our new design;

FIG. 2 is a back view thereof;

FIG. 3 is a top view thereof;

FIG. 4 is a bottom view thereof;

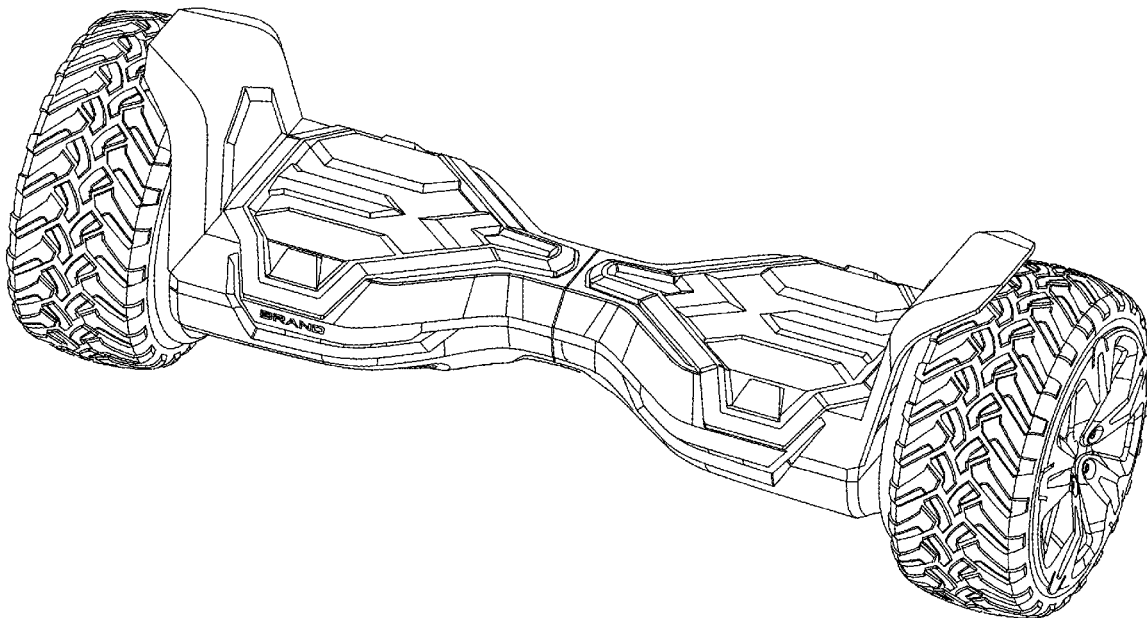
FIG. 5 is a left side view thereof;

FIG. 6 is a right side view thereof;

FIG. 7 is a perspective view thereof; and,

FIG. 8 is another perspective view thereof.

**1 Claim, 8 Drawing Sheets**

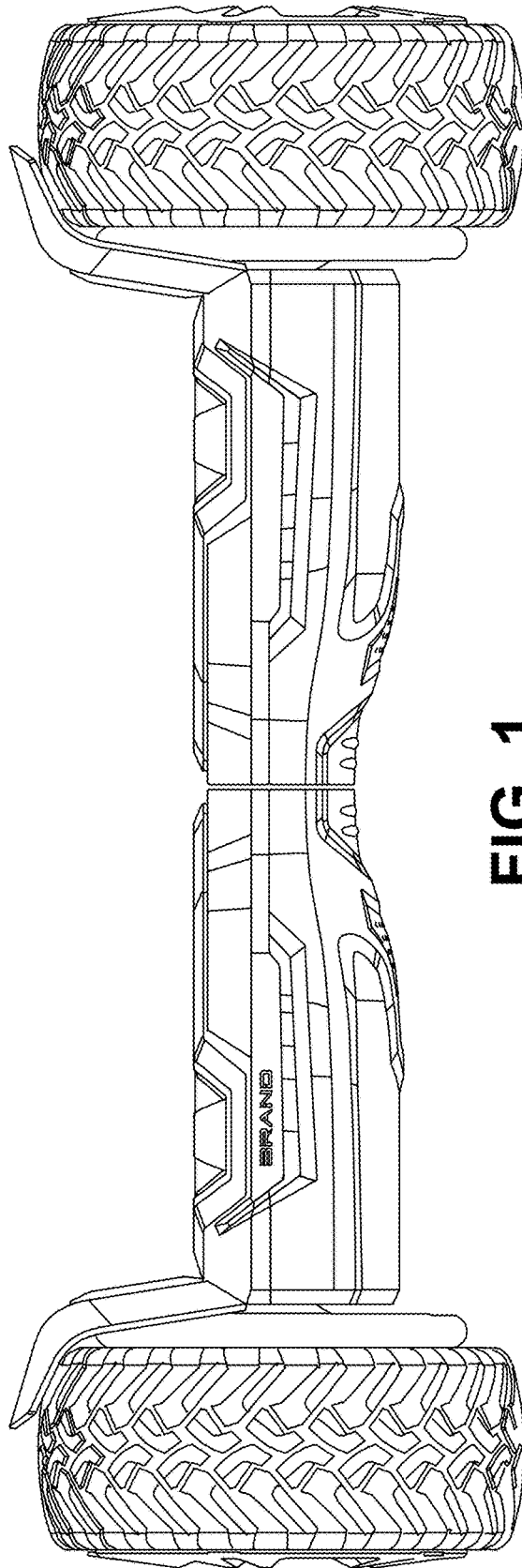


**U.S. Patent**

**Jan. 30, 2018**

**Sheet 1 of 8**

**US D808,856 S**



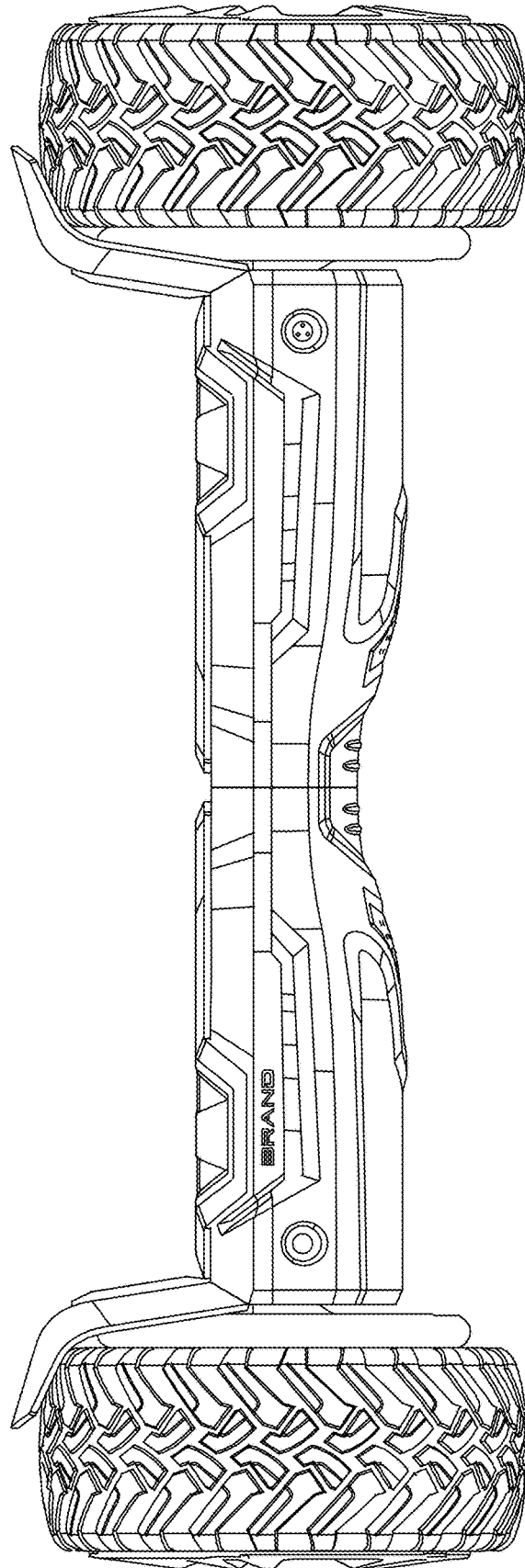
**FIG. 1**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 2 of 8**

**US D808,856 S**



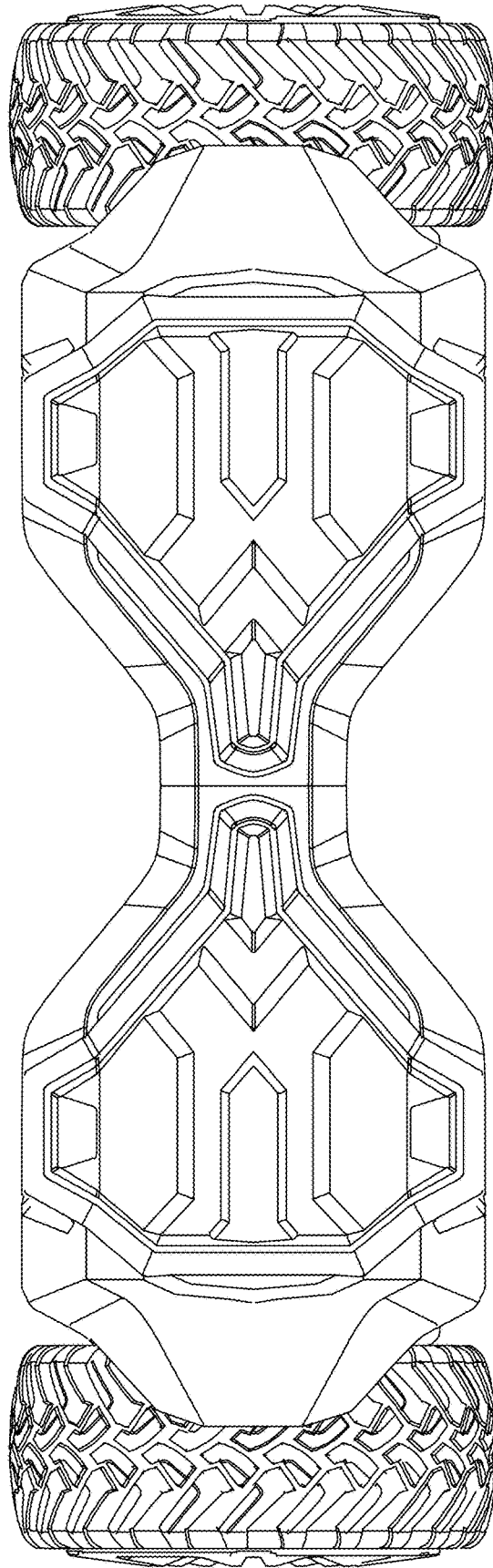
**FIG. 2**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 3 of 8**

**US D808,856 S**



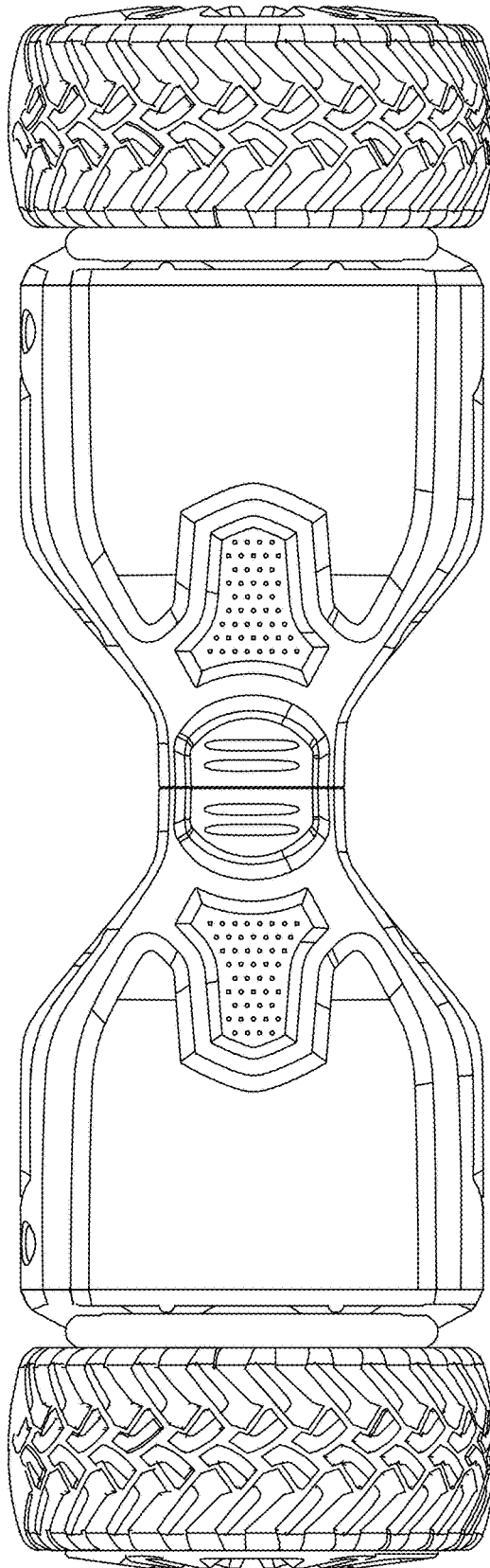
**FIG. 3**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 4 of 8**

**US D808,856 S**



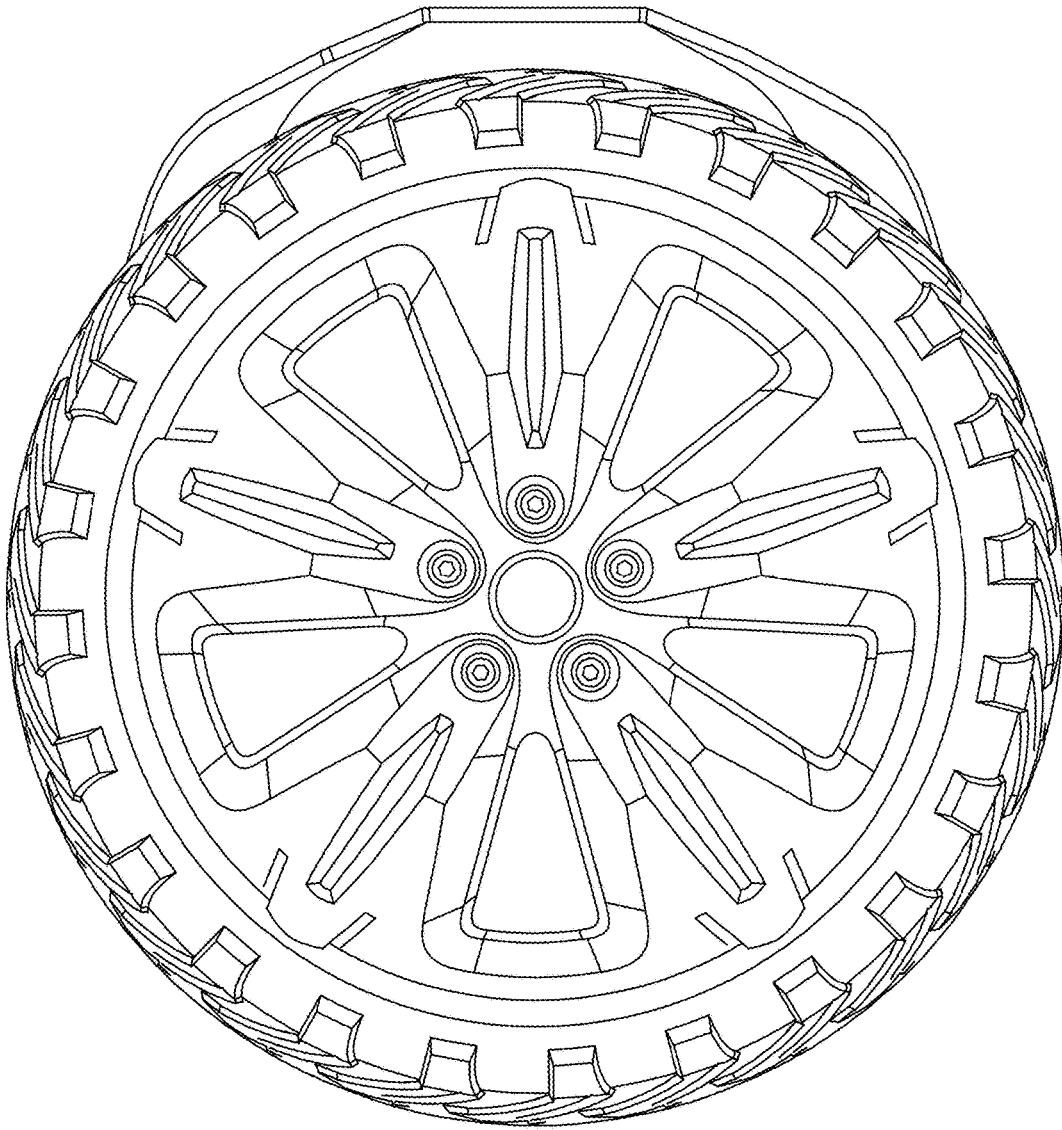
**FIG. 4**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 5 of 8**

**US D808,856 S**



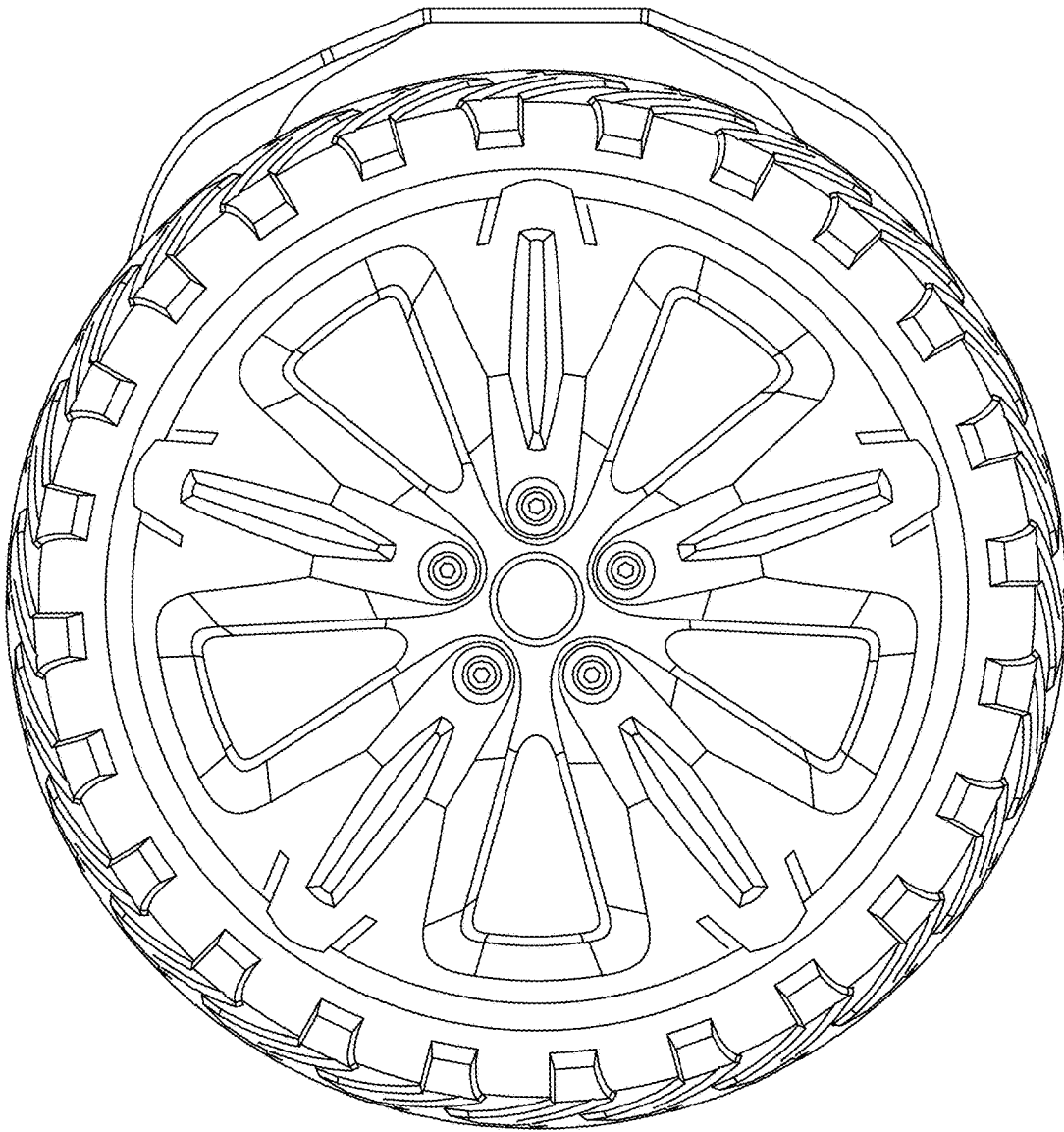
**FIG. 5**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 6 of 8**

**US D808,856 S**



**FIG. 6**

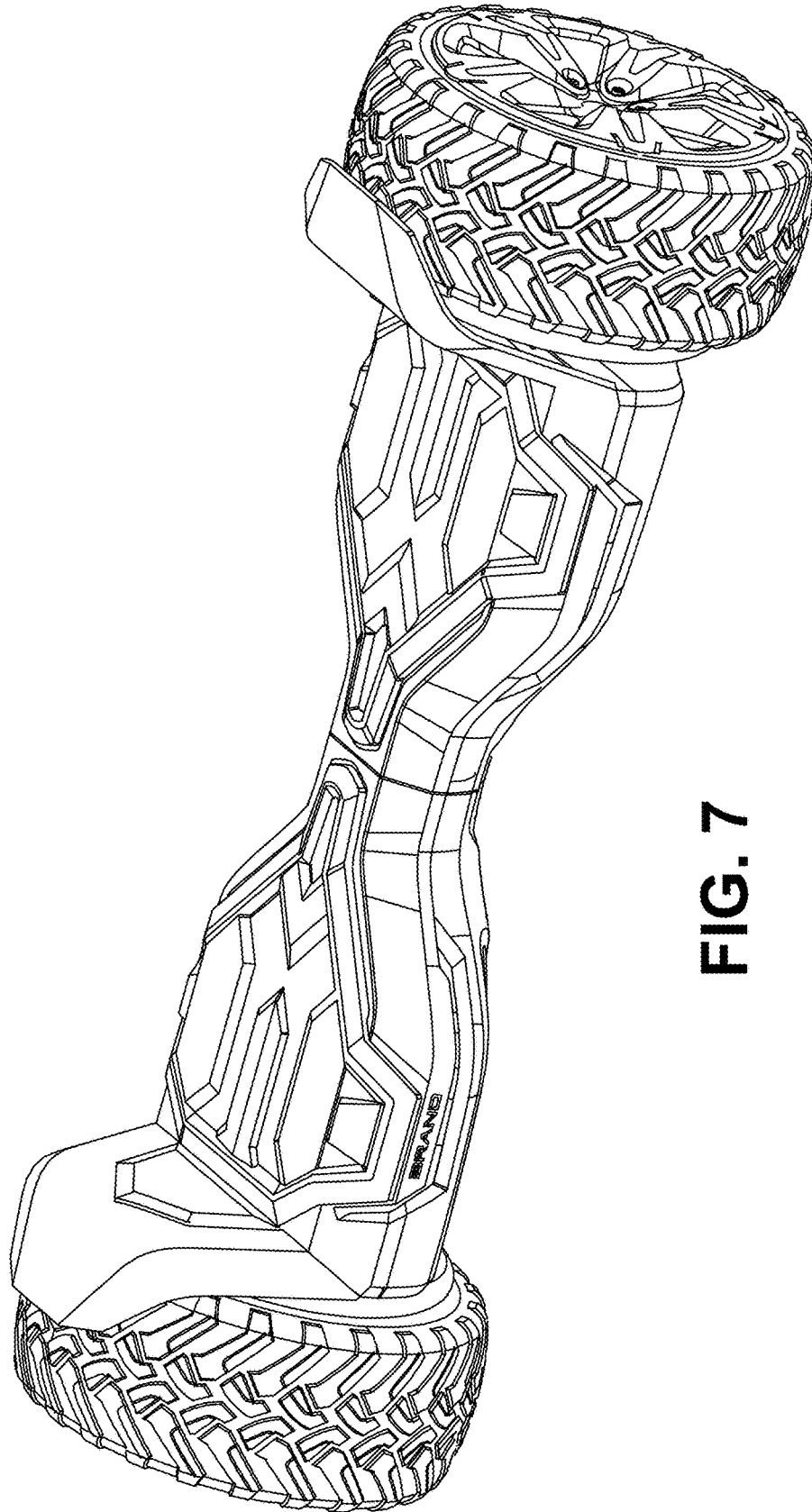


**U.S. Patent**

**Jan. 30, 2018**

**Sheet 7 of 8**

**US D808,856 S**



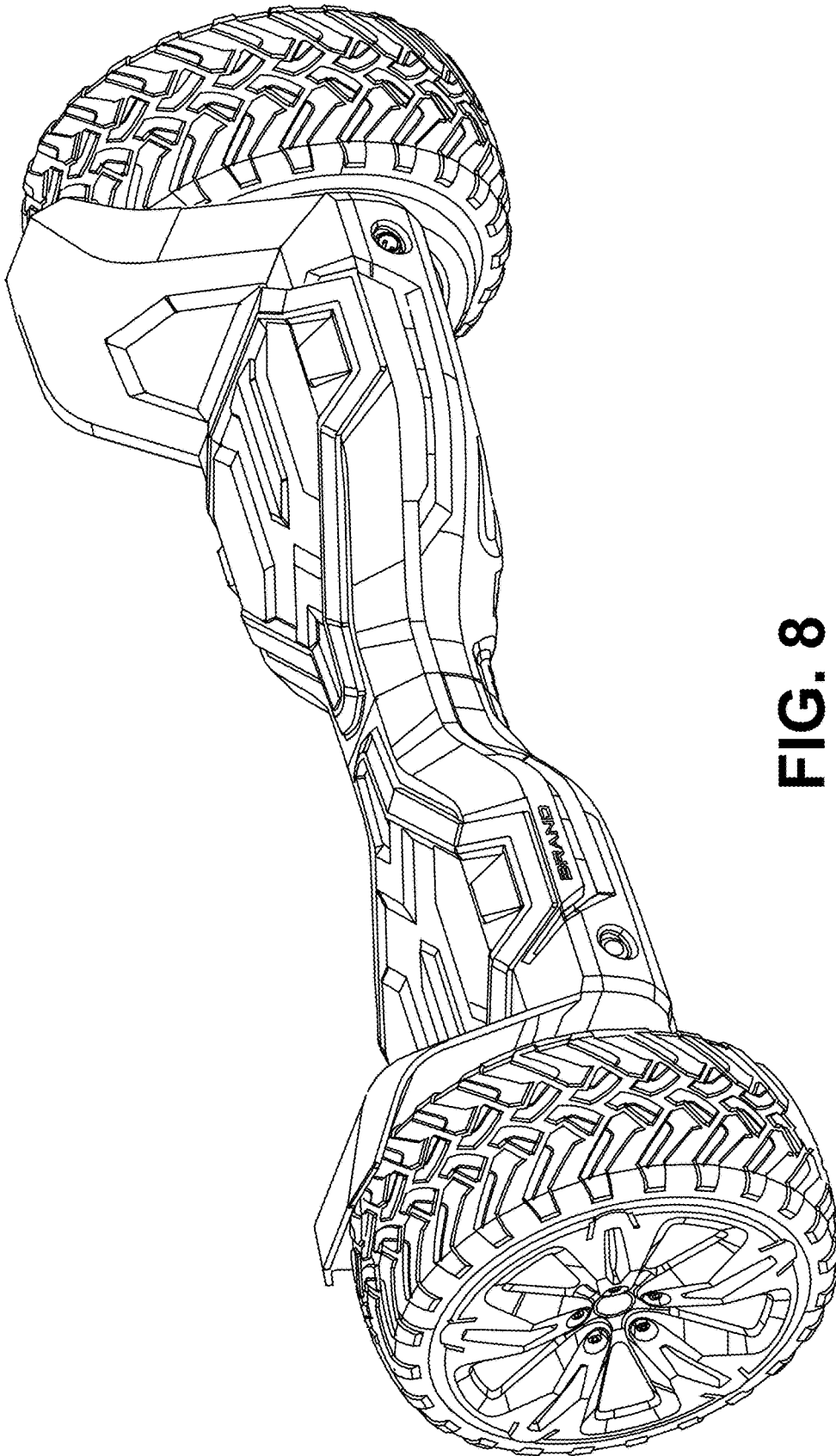
**FIG. 7**

**U.S. Patent**

**Jan. 30, 2018**

**Sheet 8 of 8**

**US D808,856 S**



**FIG. 8**

# EXHIBIT 10



US00D891297S

(12) **United States Design Patent** (10) **Patent No.:** **US D891,297 S**  
**Zhou et al.** (45) **Date of Patent:** **\*\* Jul. 28, 2020**

(54) **HOVERBOARD**(56) **References Cited**(71) Applicant: **Shenzhen Chitado Technology CO., LTD.**, Shenzhen, Guangdong (CN)

## U.S. PATENT DOCUMENTS

(72) Inventors: **Fuqi Zhou**, Guangdong (CN); **Shiyuan Zheng**, Guangdong (CN); **Dianxuan Zhang**, Guangdong (CN); **Yang Zhang**, Guangdong (CN)

D785,736 S \* 5/2017 Ying ..... D21/760  
 D808,857 S \* 1/2018 Zhang ..... D12/1  
 D817,811 S \* 5/2018 Wang ..... D12/1  
 D837,322 S \* 1/2019 Desberg ..... D21/760  
 D850,326 S \* 6/2019 Ying ..... D12/1  
 D857,137 S \* 8/2019 Cao ..... D21/760  
 D871,965 S \* 1/2020 Cao ..... D12/1  
 2018/0127047 A1 \* 5/2018 Lankford ..... B62K 11/007  
 2019/0382065 A1 \* 12/2019 Shang ..... B62J 6/00

(73) Assignee: **Shenzhen Chitado Technology Co., Ltd.** (CN)

\* cited by examiner

(\*\*) Term: **15 Years***Primary Examiner* — Ania Aman(21) Appl. No.: **29/682,549**(57) **CLAIM**(22) Filed: **Mar. 6, 2019**

The ornamental design for a hoverboard, as shown and described.

(51) **LOC (12) Cl.** ..... **12-14**(52) **U.S. Cl.**  
USPC ..... **D12/1****DESCRIPTION**(58) **Field of Classification Search**

USPC ..... D12/1, 107; D21/419, 763, 421, 423,  
 D21/426, 760, 765, 766, 769, 771, 776,  
 D21/803  
 CPC ..... A63C 17/01; A63C 17/12; A63C 2203/00;  
 A63C 2203/01; A63C 2203/012; A63C  
 2203/013; A63C 2203/40; A63C 2203/52;  
 A63C 17/0033; A63C 17/016; A63C  
 17/08; B62D 51/02; B62D 51/001; B62D  
 61/00; B62D 37/00; B62K 2202/00;  
 B62K 2207/00; B62K 2207/02; B62K  
 2207/04; B62K 3/007; B62K 17/00;  
 B62K 11/007; B60N 2/002; B60G 17/019

FIG. 1 is a front view of a hoverboard showing our new design;

FIG. 2 is a back view thereof;

FIG. 3 is a left side view thereof;

FIG. 4 is a right side view thereof;

FIG. 5 is a top view thereof;

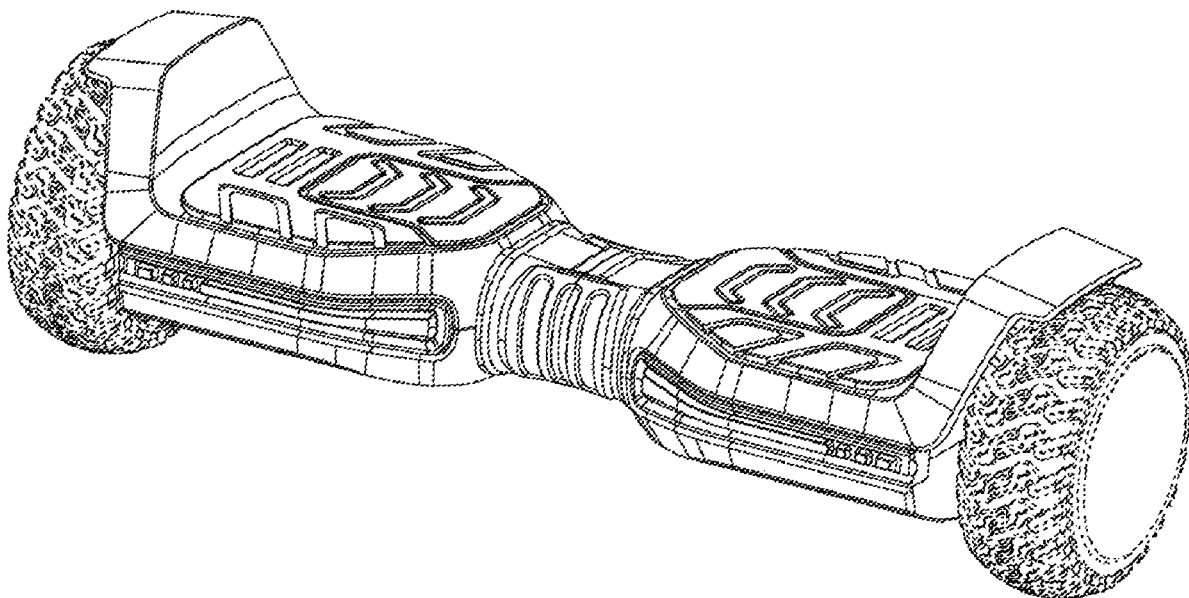
FIG. 6 is a bottom view thereof;

FIG. 7 is a top perspective view thereof; and,

FIG. 8 is a bottom perspective view thereof.

The broken line shown in the drawings are for the purpose of illustrating portions of the article and form no part of the claimed design.

See application file for complete search history.

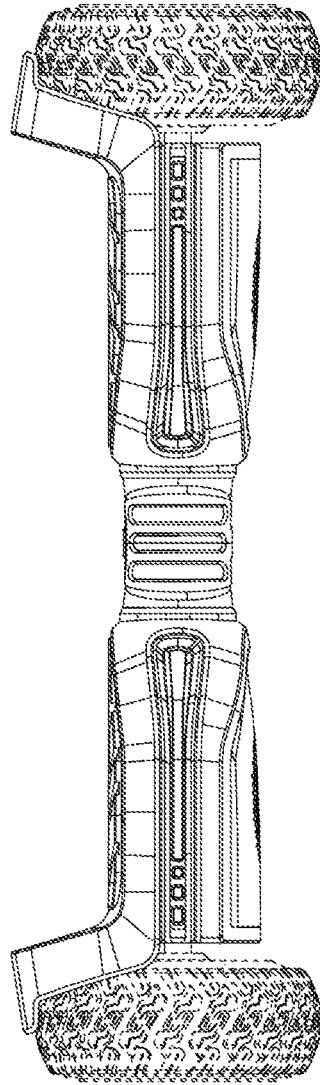
**1 Claim, 8 Drawing Sheets**

**U.S. Patent**

**Jul. 28, 2020**

**Sheet 1 of 8**

**US D891,297 S**



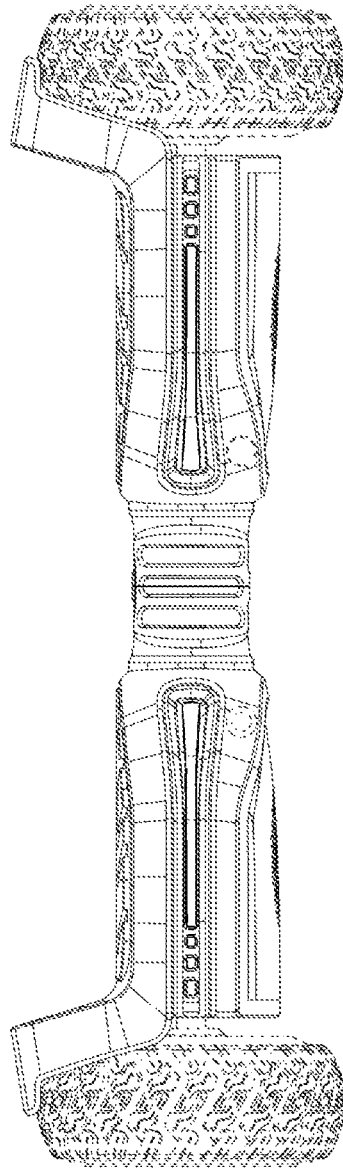
**FIG. 1**

**U.S. Patent**

**Jul. 28, 2020**

**Sheet 2 of 8**

**US D891,297 S**



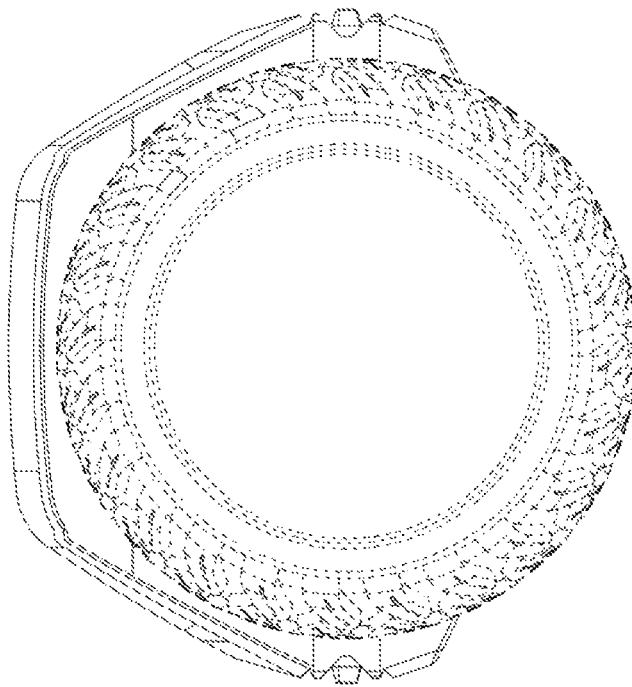
**FIG. 2**

**U.S. Patent**

**Jul. 28, 2020**

**Sheet 3 of 8**

**US D891,297 S**



**FIG. 3**

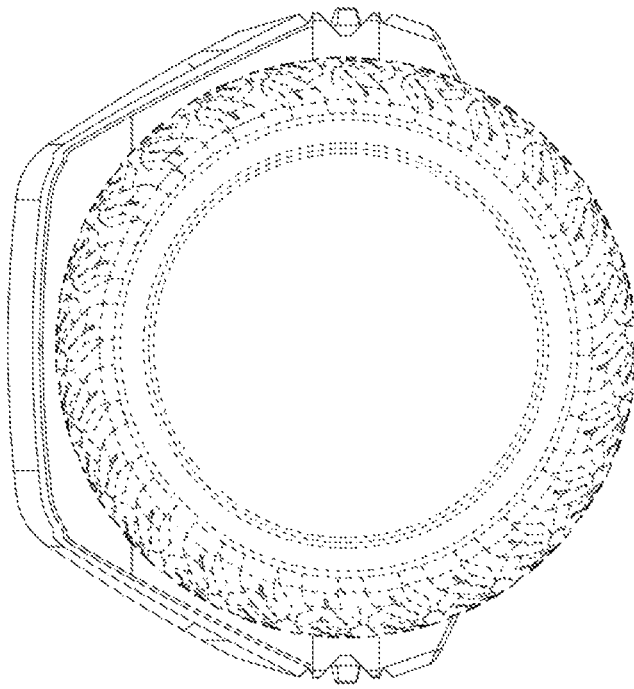


**U.S. Patent**

**Jul. 28, 2020**

**Sheet 4 of 8**

**US D891,297 S**



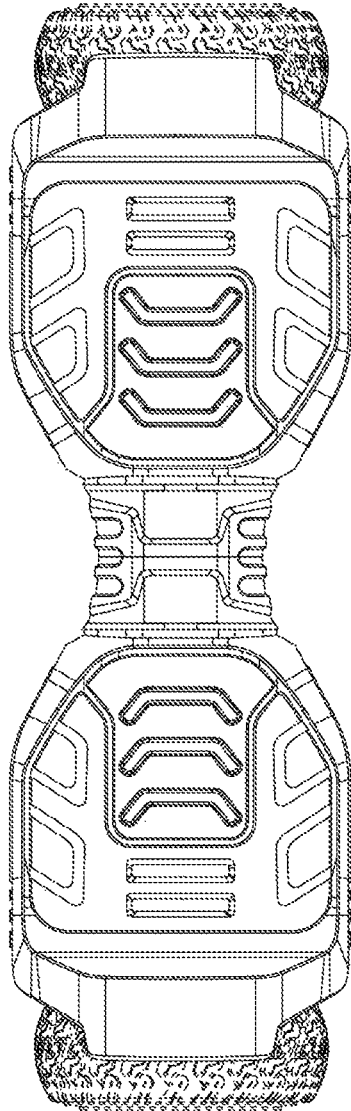
**FIG. 4**

**U.S. Patent**

**Jul. 28, 2020**

**Sheet 5 of 8**

**US D891,297 S**



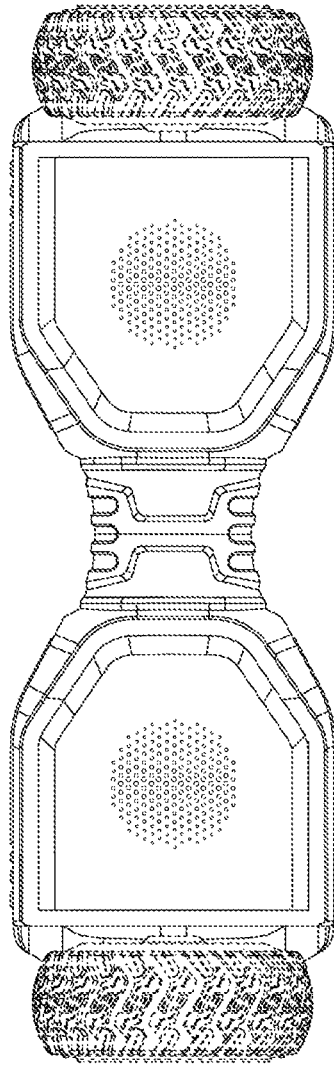
**FIG. 5**

**U.S. Patent**

**Jul. 28, 2020**

**Sheet 6 of 8**

**US D891,297 S**



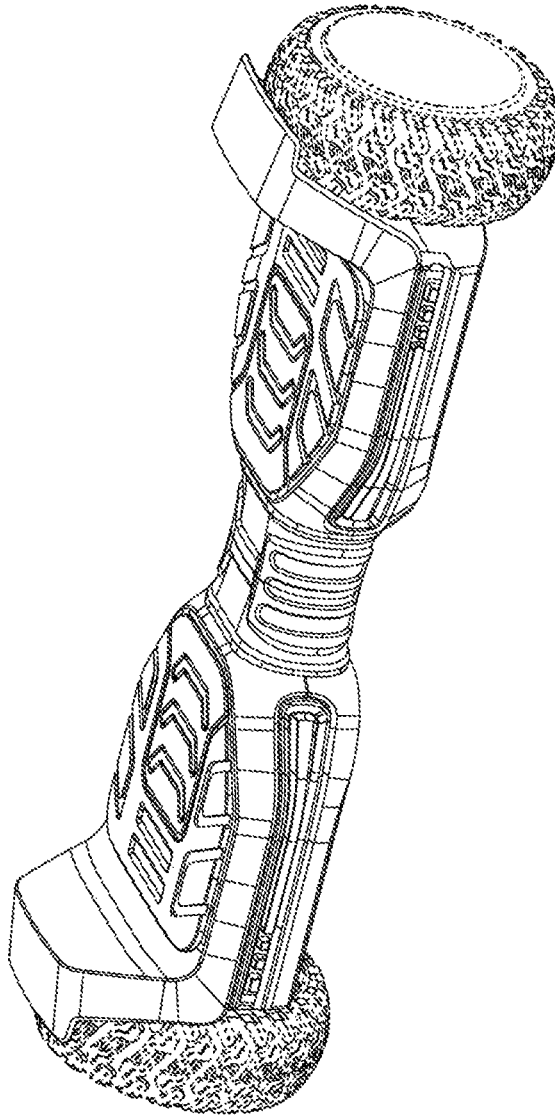
**FIG. 6**

**U.S. Patent**

**Jul. 28, 2020**

**Sheet 7 of 8**

**US D891,297 S**



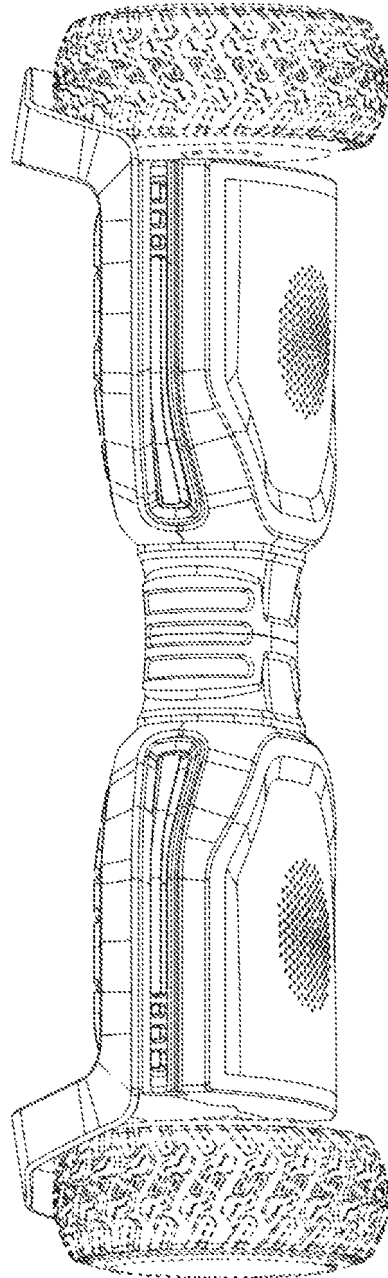
**FIG. 7**

**U.S. Patent**

**Jul. 28, 2020**

**Sheet 8 of 8**

**US D891,297 S**



**FIG. 8**